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# USSR Report

NATIONAL ECONOMY

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19 MARCH 1987

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## ECONOMIC POLICY, ORGANIZATION, MANAGEMENT

### GOSSTANDART OFFICIALS ON STATE ACCEPTANCE IMPLEMENTATION

Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 87 p 9

[Interview with B. N. Sokolov, first deputy chairman of USSR Gosstandart [USSR State Committee for Standards] and B. S. Migachev, administration chief of state acceptance, conducted by N. S. Yakovchuk, under rubric "Urgent Interview": "State Acceptance: January Results"; first two paragraphs are source introduction, last four paragraphs are filler information]

[Text] The first month of state acceptance operation has ended. In this regard the readers of EKONOMICHESKAYA GAZETA have felt the need to ask a rather large number of questions.

At the request of the editorial office, answers to these questions are provided by B. N. Sokolov, first deputy chairman of USSR Gosstandart and B. S. Migachev, administration chief of state acceptance.

[Question] How do you evaluate the results of the first month of state acceptance operation?

[Answer] It would be correct to speak of the results of the preparatory period plus one more month that has passed since state acceptance was introduced, only this time not in the form of "rehearsals," but officially. The preparation lasted for approximately two years. In 1985 representatives of Gosstandart accepted output at 19 enterprises. At the present time State Acceptance is operating at 1500 enterprises.

What can we say? At the overwhelming majority of enterprises, significant progress has been achieved during this short period of time. A half-year ago there were plants that could not turn over a single article at the first presentation. In October 1986 as much as 50 percent of the output, and in December, 60-90 percent, was turned over by them without any critical comments.

A fundamental restructuring in people's way of thinking is under way. There has been a noticeable increase in the exactingness of the enterprise personnel to the quality of their labor. The number of deviations from the technical documentation has been reduced to one-twentieth to one-tenth the previous number. The number of claims has been reduced.

Wherever serious preparation for the introduction of state acceptance was carried out ahead of time, things went well, and since the first days of this year 95-100 percent of the output is accepted immediately. For example, the Kharkov Turbine Plant of Minenergomash [Ministry of Power Machine Building] turns over 94 percent of its output successfully at the first presentation; and the Dzerzhinsk and Odessa machine building plants of Minugleprom [Ministry of the Coal Industry] and the Tbilisi Analytical Instruments Plant of Minpribor [Ministry of Instrument Making, Automation Equipment, and Control Systems], their entire output. Most of the enterprises in Minenergomash and Minelektrotekhprom [Ministry of the Electrical Equipment Industry] turn over more than 80 percent of their output without any critical comments.

At the present time 80-90 percent of the output is already accepted at the first presentation.

But whoever delayed and just sat around during the preparatory period is currently experiencing great difficulties.

[Question] During the month of January the editorial office received reports that, after the introduction of state acceptance, a complicated situation with regard to plan fulfillment developed at certain enterprises. The return of individual consignments of articles of output to have additional work performed on them -- sometimes as often as several times -- had led to an increase in production costs. There was a corresponding reduction in the income received by the enterprises. That means that the deductions paid into the incentive funds are reduced. In certain instances the workers' wages were reduced. As can be seen from the readers' letters, under these conditions the state acceptance workers conduct themselves in various ways. For example, a letter from the Simferopol Television Plant states that at the end of the month a tremendous number of television sets accumulates at the end of the production line, but the heat check that is required by the control terms has been reduced by the plant workers from 100 to 48 hours. That means, the author of the letter feels, that it is impossible to locate a defect that will appear in the television set during the very first ten days of its operation. The state acceptance workers, the letter states, close their eyes to this, although they treat as a serious flaw any scratch on the housing, regardless of the fact that it has no influence whatsoever on the operating quality of the television set.

In other instances, on the other hand, the state acceptance representatives display uncompromising exactingness. For example, readers report to us that at the Salyut Garment Association in Moscow, the output of which sells like hotcakes at the stores in the capital, the acceptance agents sometimes return consignments of women's winter overcoats if they have the most insignificant deviations from the technological requirements, which deviations are completely unnoticed by the consumer.

In which instance, in your opinion, are the state acceptance workers conducting themselves more correctly? And, generally speaking, are any compromises at all admissible at enterprises which, for various reasons, are

unable for the time being to adhere completely to the requirements that are made of their output?

[Answer] Are compromises admissible? That is an extremely interesting and fundamentally important question. But first I would like to discuss the influence that state acceptance has upon the economy at the enterprises.

The new economic mechanism creates considerable economic incentives for the enterprises to produce modern articles that are technically advanced and capable of competing. Major price markups have been established for them, and the production of these articles brings a considerable benefit to the enterprises. But it is necessary, at the manufacturing stage, for the outstanding technical decisions that were found by the designers not to be lost as a result of sloppy technological processes or careless execution. That is why firm adherence to principles and firm exactingness on the part of state acceptance workers are so important.

Of course, when a consignment of output, for some reason, is returned and something in it has to be replaced, to have additional work performed on it, to have additional checking, etc., the expenditures increase. There is nothing surprising about this: quality costs dearly. Are these difficulties that the enterprises are experiencing surmountable?

During this month we have heard all kinds of things: we have been warned that many plants will completely stop operating if the exactingness of the State Acceptance agencies is not relaxed. It must be said that not a single plant has stopped operating because of state acceptance. We were told that such dissension would begin between the enterprises and state acceptance that joint work would be impossible. Those fears also proved to be unnecessary. Of course, there can be differences of opinion between the plant and State Acceptance. In definite instances, as a result of uneven shipments, a complicated situation actually does occur at the end of the month. Sometimes the plants, just before the end of the month, refrain from submitting output to acceptance, realizing that it will not be accepted. But even if the plant managers "entreat" the state acceptance workers to make exceptions, those workers cannot be led about on a leash. Such attempts, if they do exist, must be decisively stopped. At the January Central Committee Plenum it was clearly stated: we have undertaken a large job and we are obliged to take it to its end.

But there are enterprises with obsolete equipment, at which you cannot achieve good quality. There are those that are greatly let down by suppliers of raw materials and components. Economists at many plants have written about this on the pages of EKONOMICHESKAYA GAZETA. Prompt preventive repairs on the equipment, the stricter monitoring of the precise observance of the technological processes, and the material self-interestedness of the workers in excellent quality are all being taken on currently as standard equipment by the enterprises. Nevertheless, in a number of instances, it is impossible by using these means to resolve all the problems. It is sometimes necessary to continue to produce output under extremely negative conditions which, for the time being, cannot be corrected. What should one do in this instance?

We approach the problem in a comprehensive manner. The state acceptance workers, together with the managers and technical services of the enterprises, prepare a plan of actions for guaranteeing the necessary quality of the articles. This is a quarterly, monthly, or weekly plan, that is, it is a plan for a definite, limited period of time. The plan is placed under monitoring by state acceptance, Gosstandart, and the branch ministry which has in its hands the material support of the plan. At such time the acceptance agents temporarily have the right to allow exceptions in those parameters that have no influence upon the basic, determining qualitative characteristics of the output. These exceptions do exist, but they are few in number. Simultaneously we request the consumer's consent to various exceptions and sometimes accept them with a corresponding reduction in the quality rating and wholesale price. But it must be emphasized that all these are definitely temporary measures which will become fewer and fewer with every passing day.

[Question] B. M. Korovin, from Alma-Ata, and Yu. L. Krakovskaya, from the city of Bor, Gorkiy Oblast, ask, "What caused the introduction of state acceptance, when OTK [technical control departments] exist at the plant services?"

[Answer] The plant OTK exerted an insufficient effect upon the quality of output. The fact that the services subordinate to the enterprise belonged to various departments, the level to which they were provided with metrological tools and other monitoring means, their personnel makeup, the low wages and prestige, the insufficient proficiency of the workers, and, primarily, of course, the orientation of the enterprises toward the quantitative indicators to the detriment of the quality indicators led to a situation in which matters involving the quality of output proved in many places to be greatly neglected and the OTK could not cope with them. Nondepartmental control helps to correct the situation more rapidly.

It is extremely typical that many enterprises where state acceptance has not yet been introduced are persistently requesting to be included as quickly as possible among them where nondepartmental control already is in operation and is actively helping to resolve the production tasks.

[Question] The next question is connected with that. K. A. Chikizov, from Moscow, L. I. Vershinina, from Penza, and V. L. Kantorovich, from Leningrad, express doubt, asking whether the new service will not duplicate the functions of the technical control departments at the plants, whether the government's expenses to maintain it are in vain, and whether, for enterprise managers who already are well aware of the weak places in production, it is sufficiently authoritative.

[Answer] The state acceptance agencies, without a doubt, do not duplicate the OTK. First, they employ only one-twelfth to one-tenth the number of people. Secondly, technical control is an inseparable part of the technological process at every stage of production, in every operation, and no one can replace the workers in the plant service in these operations. We operate after the OTK, we check only that which has already been accepted by the plant checkers.

As for the authority of the state acceptance workers, the success of the job that has been begun, which success manifested itself from the very first, is precisely based on the fact that state acceptance has taken on very strong cadres. Four out of every five workers in state acceptance are specialists at the very same plants and factories where they currently carry out control in the name of the government. Who are they? Almost a third of them are former chief specialists at enterprises. Approximately 7 percent are former directors and deputy managers of enterprises; 26 percent are medium-level managers; and, paradoxical as it may sound, approximately 28 percent are former OTK chiefs, who are required to make the most profound psychological break.

Of course, these cadres have an excellent knowledge of production, its hidden capabilities, and its weak spots. Their recommendations and critical comments are based on that knowledge. It is precisely because of their very high professional efficiency that the reproaches and demands of state acceptance are perceived correctly by the managers of the associations and enterprises.

Are we not losing a lot of money by maintaining them? We lose an immeasurably larger amount as a result of the poor quality of technology and other articles. The reduction of the expenditures for repairs during the warranty period or the complete lack of these expenditures will show you rather precisely the effectiveness of the expenses to maintain state acceptance.

[Question] EKONOMICHEKSYA GAZETA has opened "quality posts" at dozens of enterprises throughout the country. And practically every piece of correspondence from those posts contains complaints directed at enterprises delivering raw materials and components. It would seem that the situation should have improved sharply, since state acceptance was also introduced at raw-material production entities. What means of influencing suppliers of inferior output, other than the traditional penalty sanctions, which, as everyone knows, in the practical situation are employed very rarely between constant partners, have become available for the injured party under the conditions of state acceptance?

[Answer] When selecting enterprises for the introduction of state acceptance, we attempted to achieve a situation in which the chain would encompass as many interrelated enterprises as possible, since actually the working capability of a tractor frequently depends upon a grease box or storage battery. But it is not possible to achieve this in all instances. For example, ZIL has 200 major suppliers. State acceptance operates at only a dozen of them. And yet it is well known that every complicated technical article, such as a truck or a tractor, is itself the tip of a kind of pyramid, the base of which is made up of numerous raw materials and components: all kinds of gaskets, different kinds of rubber, relays, etc. The interrelationship between the base and the tip of the pyramid is such that if we assign, for example, the task of bringing the operating time of the Don combine before breakdown to 300 hours, then, say, the bearings in that combine must have an operating time before replacement not of 300 hours, but 500 hours of troublefree operation. How



does one encompass an entire system? One can resolve this rather successfully by methods of standardization, by defining the specifications for every element. In observing them, we are helped by other Gosstandart agencies that have existed for a long time -- its territorial centers. The recipient enterprises can exert an influence successfully upon the supplier of inferior output by communicating his claims to that center of standardization and metrology, which centers exist everywhere. Recently we required them, when responding to warning reports from state acceptance, to take immediate steps with respect to enterprise that provide sloppy output. Also, by way of the territorial centers, productive horizontal links are made between the State Acceptance managers at related enterprises.

[Question] What subsequent steps do you envisage in the new control service?

[Answer] As experience is accumulated, the zone of state acceptance will expand. That zone will encompass a larger number of raw-material production entities, as well as enterprises that manufacture consumer goods with a mass market. For example, for the time being Moscow has only two garment associations that submit their output to nondepartmental control. Soon they will be joined by about 20 more.

The functions of state acceptance will also become more complicated. At the first stage, state acceptance requires only the strict observance of the requirements of the approved technical documentation, the GOST [All-Union State Standards], and the OST [All-Union Standards]. The introduction of order in this matter will make it possible within a short period of time to remove, so to speak, the "upper layer" of the problem. These are measures which are not very expensive, but which have a rather high rate of results on the path toward an improvement of quality.

The second stage, which is beginning this year and which will continue into the future -- is the increase in the requirements that state standards make on the new generation of technology that is only now being put into production. We have in mind the improvement of the technological processes, the quality of the ideas contained in that technology of the future, the providing of them with the necessary volume of tests, etc. That is, the state acceptance agencies will have to participate in the resolution of the fundamental questions linked with the quality both of today's technology and especially tomorrow's.

At the present time 1500 enterprises subordinated to 28 ministries turn over their output to state acceptance.

State acceptance encompasses motor vehicles, machine tools, bulldozers, as well as raw and other materials for them; radio and photographic articles, all the television sets and refrigerators that are produced in the country, almost all the agricultural technology, tractors and combines, and, partially, fabrics, footwear, and sewn garments.

Half of all our country's industrial output passes through the state acceptance system.

At the present time 80-90 percent of the output is turned over at the first presentation.

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## ECONOMIC POLICY, ORGANIZATION, MANAGEMENT

### CPSU, USSR COUNCIL OF MINISTERS QUALITY IMPROVEMENT DECREE

Moscow SOBRANIYE POSTANOVLENIY PRAVITELSTVA SOYUZA SOVETSKIKH  
SOTSTIALISTICHESKIKH RESPUBLIK in Russian No 24, 1986 pp 411-429

[Decree of the CPSU Central Committee and the USSR Council of Ministers: "No. 139: Measures for Fundamentally Improving the Quality of Output"]

[Text] The CPSU Central Committee and the USSR Council of Ministers note that, under present-day conditions, the fundamental improvement of the quality of output is one of the key economic and political tasks in implementing the course of the 27th CPSU Congress, which is aimed at accelerating our country's socioeconomic development, and is a very important factor in intensifying the economic for purposes of the most complete satisfying of the growing needs of the national economy and the public.

In recent years a certain amount of work has been carried out in the national economy to raise the technical level and improve the quality of output and the operations being fulfilled. At the same time, the achieved results do not conform to the tasks that were assigned.

The level of scientific research and of construction planning-and-design and technological developments does not always meet the present-day scientific-technical requirements or the prospects for the development of the national economy.

At many associations, enterprises, and organizations, technological and production discipline is not being observed, there have been violations of the standards and specifications, the efficiency level of production has been low, and there have been large losses due to defective work.

The necessary steps are not being taken to provide production with modern equipment, or to introduce the latest technological processes that guarantee a steady production of high-grade articles. The quality of consumer goods and personal services frequently causes the justified complaints on the part of the workers. This situation not only inflicts a large economic loss on the national economy, but also lowers the prestige level of Soviet articles.

The managers of ministries and departments, associations, enterprises, and organizations have not yet overcome the force of inertia that developed during



that period when, in the planning and evaluation of economic activity, the proper attention was not paid to the qualitative indicators, and they have not been providing a well-principled evaluation of the instances of placing in production and of producing output that is technically backward and of poor quality.

The situation that has developed in the interrelationships between the developers and the customers, between the suppliers and the consumers, does not promote the rise in the technical level or the improvement of the quality of the output being produced.

The technical control services of many associations and enterprises have been carrying out unsatisfactorily their functions of preventing the production of inferior output, have not been manned by qualified cadres, and do not have modern control means at their disposal.

Many workers and specialists, production brigades, and labor collectives at associations and enterprises still bear a low responsibility for the quality of the output. The system of psychological and material incentives has not been aimed at having the workers improve their professional skills or at imbuing in them a sense of pride for the honor of the plant's trade mark.

The USSR State Committee for Standards, in its practical work, has reconciled itself to the low technical level of the standards; occupies an appeasement position with the inadmissibly low requirements of the standards that are submitted by the ministries and departments for approval; does not make full use of the rights granted to it with respect to stopping the production of output with low quality; and fails to guarantee in the standards being developed the conformity to the requirements at the worldwide level, to international standards, or the promising scientific-technical achievements.

The existing system of training and instructing cadres does not correspond to the increased requirements with regard to the professional level of the workers under conditions of the intensification of production and the acceleration of scientific-technical progress.

The CPSU Central Committee and the USSR Council of Ministers decree:

1. The Central Committee of the Communist Parties of the union republics, the party kraykoms, obkoms, okruzhkoms, gorkoms, and raykoms, the Councils of Ministers of the union and autonomous republics, the ministries and departments, the trade-union and Komsomol agencies, and the associations, enterprises, and organizations are to consider to be their most important practical task at the present-day stage in our country's socioeconomic development the implementation of the decisions of the 27th CPSU Congress with regard to the fundamental improvement of the quality of output, in order, during the 12th Five-Year Plan, to bring about a decisive turning point in this important matter.

Improving the quality of output and the operations being fulfilled must become a party-wide, government-wide, nationwide job, the central link in the development and implementation of long-term, five-year, and annual plans, the

object of constant attention and supervision, and the chief factor in evaluating the work performed by every labor collective.

For Increasing the Role and Intensifying the Responsibility Borne by the Developers for Guaranteeing the High Technical Level and Quality of the Output

2. It is established that the developers in the production and scientific-production associations and at enterprises, and the scientific-research, the construction planning-and-design, and technological-planning, and other organizations, when creating or fundamentally modernizing machinery and equipment, materials, and technological processes, bear the complete responsibility for implementing the long-range requirements for the technical level and quality, including the operating periods between overhauls and the reliability, which correspond to or surpass the highest worldwide achievements, and the general (chief) designers bear the personal responsibility for these indicators.

It is forbidden to put into production any developments that do not conform, with respect to their basic indicators, to the highest worldwide level. Customers and other organizations are not to coordinate the technical assignments for developing output at a level that is lower than that of the worldwide achievements.

3. For purposes of creating the conditions for developing high-grade output, the managers of associations, enterprises, and organizations are to guarantee:

- the broad introduction of automated planning, modeling, artistic designing, and other progressive methods of developing new prototypes of industrial articles, consumer goods, materials, and technological processes;

- the mandatory execution of thorough tests, including those under conditions that are as close as possible to the real operating conditions;

- the development and implementation on a first-priority basis of assignments for developing and technically re-equipping the research-laboratory and experimental-design base at the associations, enterprises, and organizations.

4. The USSR State Committee for Science and Technology is to be required to carry out in 1986-1987, jointly with USSR Academy of Sciences, USSR State Committee for Inventions and Discoveries, and the ministries and departments, the fundamental restructuring of the work of all the information organizations and services, having in mind the creation of an effective information system throughout the country for constantly and purposefully providing developers and other interested organizations with the necessary information concerning the latest achievements and tendencies in the development of the corresponding areas in domestic and foreign science and technology.

5. Taking into consideration the fact that, when determining the technical level of output in the process of developing it, putting it into production, and certifying it according to quality categories, there have been instances

of the distortion of information concerning the achieved worldwide level, a situation that inflicts a substantial economic loss on the national economy, the material and administrative responsibility borne by the officials for these actions is to be established.

The USSR State Committee for Labor and Social Problems and USSR Ministry of Justice, jointly with AUCCTU, are to submit the appropriate recommendations to USSR Council of Ministers.

6. The developer of the final output is to be granted the right to establish assignments that are mandatory for the developers of materials and components, which assignments pertain to the technical level, the operational time between overhauls, the reliability, and the quality of those articles and materials, as well as the types, volumes, and methods of tests performed on them. The customer's requirements are mandatory for the developers of materials and components.

It is established that the developer assumes guaranteed pledges to the manufacturer of the output for the quality of the technical documentation to be transmitted to production, and for the conformity of the developed article to the technical assignment.

7. The managers of scientific-research institutions and of design and technological organizations are to make more complete use of the rights granted to them by decree No. 462, dated 22 May 1985, of the CPSU Central Committee, USSR Council of Ministers, and the AUCCTU, which rights pertain to establishing for scientific workers, designers, and technologists raises in the amount of up to 50 percent of salary rate for fulfillment of the most complicated and most responsible operations. When determining the size of these raises, the primary factor to be taken into consideration is the output that has been certified for the state Quality Seal.

8. It is deemed desirable, for purposes of increasing people's psychological self-interestedness and increasing the public recognition of the originators of developments that are of very great importance to the national economy, to apply the names of the developers to the fundamentally new types of output, to technological processes, and to consumer goods.

9. The ministries and departments, and associations and enterprises, are to develop in 1986 target scientific-technical programs for improving the quality and reliability of output in 1986-1990 and for the period until the year 2000, stipulating in them:

- the forecasting of the indicators of the technical level and quality of the most important types of output, with a consideration of the requirements of the international standards that guarantee its competitive capability;

- the development of fundamental and applied research on problems of quality and reliability;

-- the development and introduction into practice of modern methods of computation, designing, modeling, and designer resolutions that guarantee high quality and reliability;

-- the creation of testing, diagnostic, and control-measurement equipment. There is to be a substantial expansion of the volume of test-stand finishing operations on the articles. The production of the necessary quantities of test-stand equipment for this purpose is to be organized;

-- the development of technical-norm documentation that establishes the outstripping levels of the requirements made on the output, the organization, and the volumes of tests;

-- metrological support of the projects at the stage of research, development, production, and operation, for which purpose there is to be a sharp increase in the volumes of production of automated control-measurement equipment, including that which is built into the technological process;

-- research and development of special requirements on the base components of the machines, machinery, equipment, instruments, and other articles to be created, with regard to their quality and reliability, as well as the requirements on the organization of production, the equipment and tools, and the system and means of control and measurements.

The interbranch scientific-technical complexes are to be involved in developing and implementing these target programs.

It is deemed necessary to create in 1986-1987, in the ministries and departments that are the lead ones with regard to types of output, centers for the certification of output for conformity to the requirements of the international standards.

The USSR State Committee for Science and Technology and USSR State Committee for Standards are to take under their supervision the creation of these centers and in the fourth quarter of 1987 to report to USSR Council of Ministers concerning the work that has been done.

The USSR State Committee for Science and Technology, USSR Gosplan, and USSR Academy of Sciences, within the confines of their competency, are to take the necessary steps linked with the development and implementation of target scientific-technical programs in the branches, and for questions that require resolution by superior agencies, to submit the appropriate recommendations to USSR Council of Ministers.

**For Raising the Technical Level of Production and Its Degree of Technological Equipment in Order to Guarantee the Producing of High-Grade Output**

10. It is established that a very important task of the labor collectives at associations, enterprises, and organizations in guaranteeing the producing of output with a high technical level, and guaranteeing quality, a long operating

period between overhauls, and reliability, is the substantial acceleration of the assimilation into production of promising design developments, progressive technological processes, and the newest materials, as well as the broad introduction of scientific-technical achievements.

The USSR State Committee for Science for Science and Technology, jointly with the ministries and departments, is to generalize the work experience of the Institute of Electrical Welding imeni Ye. O. Paton, of UkSSR Academy of Sciences, the Uralmash Production Association of the Ministry of Heavy and Transport Machine Building, the All-Union KriOTEKhnika Scientific-Technical Association of the Ministry of Chemical and Petroleum Machine Building, the Tekhnologiya Scientific-Technical Association of the Ministry of the Aviation Industry, and other associations, enterprises, and organizations that have achieved significant results in raising the technical level of production in order to produce modern output with high quality and is to prepare recommendations for the dissemination of that experience.

11. The ministries and departments, and the associations and enterprises, when developing target scientific-technical programs, are to devote special attention to raising the technical level of production, stipulating in them:

- the broad introduction of automated systems for controlling and monitoring the technological processes;

- the substantial increase in the percent of progressive types of blanks and billets;

- the sharp increase in modern base technological processes that make it possible to increase the labor productivity by many times and to achieve a fundamental improvement in the quality of the output being produced;

- the outstripping development of shop capacities for producing modern types of tools and technological gear, and of the series of services for production preparation;

- the priority equipping of the finishing operations with the latest types of equipment;

- the remodeling and technical re-equipping of the existing industrial enterprises, as well as the construction of new ones, only on the basis of plans that stipulate the employment of modern technological processes and equipment, and progressive forms of the organization of production and labor.

12. The ministries and departments, and the associations, enterprises, and organizations are to develop and implement joint work plans for the resolution of specific tasks in order to carry out a single technological policy when re-equipping production for the production of high-grade output and the components and materials that go into their manufacture.

It is deemed necessary, for purposes of guaranteeing the exchange of experience in developing and introducing into production progressive technological processes and in creating the latest types of equipment, to

hold regular interbranch technological exhibitions with a consideration of the practice of holding Progress Exhibitions.

13. The ministries and departments, and the associations, enterprises, and organizations, when certifying the jobs, are to analyze the technological processes and the condition of the equipment and tools, and to take the necessary steps to guarantee the stable quality of the output being produced.

14. For purposes of raising the technical level of production, improving the structure of the production capacities, accelerating the introduction of new progressive equipment, and improving on that basis the quality of the output being produced and the labor productivity, USSR Gosplan, the USSR ministries and departments, and the Councils of Ministers of the union republics, are to:

- stipulate in the plans for the 12th Five-Year Plan the renovation of the fixed production assets in industry by no less than 35 percent, including as much as 45 percent in machine building;

- guarantee the writing off annually of no less than 3-6 percent of the obsolete and relatively ineffective equipment, including no less than 6-8 percent in machine building;

- when developing new norms for depreciation deductions, to stipulate the encouragement of the accelerated renovation of the fixed production assets of the associations and enterprises by establishing the amounts of those deductions that are differentiated by individual years.

USSR Gosplan, USSR Gosplan, USSR Gosplan, USSR ministries and departments, and the Councils of Ministers of the union republics are to stipulate in the plans for the 12th Five-Year Plan the resources that are necessary for carrying out these measures, devoting special attention to the development in the branches of their own machine building.

USSR Gosplan, the USSR State Committee for Science and Technology, and USSR Gosplan, jointly with the ministries and departments, are to take into consideration the indicators of the operating time between overhauls and the reliability of the articles when determining the depreciation periods for machines and equipment and their production volumes.

For Increasing the Responsibility Borne by the Associations, Enterprises, and Organizations for the Technical Level and Quality of the Output

15. The CPSU Central Committee and USSR Council of Ministers feel that the resolution of the problem of the cardinal improvement of the quality of output is the direct duty of every collective, every worker, specialist, and manager. The fight to improve the quality of output must become the norm in the daily life of the labor collectives.

The associations, enterprises, and organizations must bear the complete responsibility for the quality of the output, its competitive capability on

the world market, and the conformity of the new articles and materials to the strictest requirements that guarantee scientific-technical progress. The indicators of the technical level and quality of the output must become the determining ones when evaluating the results of their economic activity, and the size of the economic incentive funds must depend primarily upon the quality of that activity.

When establishing the price level for output, the factors that must be of determining importance are its technical-economic level, its quality, and its conformity to the best worldwide achievements and international standards. Moreover, complete use is to be made of the rights granted by CPSU Central Committee and USSR Council of Ministers decree No. 669, dated 12 July 1985, and with regard to consumer goods produced by light industry, CPSU Central Committee and USSR Council of Ministers decree No. 489, dated 24 April 1986.

It is established that the amounts of money exacted from associations and enterprises in the form of sanctions for the manufacture and delivery of inferior output and as compensation for losses incurred by the consumer of the output pertain to that part of profit which is intended for the formation of the economic incentive funds of the associations, enterprises, and organizations. At such time the size of the funds being formed cannot be reduced by more than 20 percent.

16. Personal responsibility for producing inferior output is to be imposed on the production organizers at all levels -- from association, enterprise, and organization managers to the foreman. The basic assumption will be that the regular production of output that deviates from the standards and the specifications attests to the fact that the production manager has not been trained for the fulfillment of his duties and he fails to conform to the position being occupied.

Nonexecution by association, enterprise, and organization officials of the prescriptions of the State Acceptance Commission which are formed in conformity with this decree and which deal with the cessation of shipment of output that does not conform to the standards and specifications, and the inclusion of that output in reports concerning the fulfillment of the planned assignments and contractual pledges, are to be viewed as misrepresentation of state statistical reports, with all the consequences evolving therefrom.

17. There is to be an increase in the responsibility borne by the associations and enterprises to the customers, considering the satisfying of their demands on the quality of the output to be a very important task. The customers at such time are to demonstrate high adherence to principles and persistence.

For purposes of intensifying the effect of the consumers upon the quality of the output being delivered, it is established that, in the event of the repeated shipment of poor-quality output, the consumer has the right to cancel unilaterally the contract with the supplier after giving him notification at least one month in advance. The supplier at such time is required to stop temporarily or completely the production of the particular output and to compensate the consumer for the losses incurred as a result of the cancellation of the contract.



Managers who are to blame for the regular production of inferior output that has led to the cancellation of a contract are subject to being brought to responsibility in conformity with the legislation that is in effect. The ministers and the boards of governors at the ministries to which the suppliers are subordinate are required to guarantee the restitution of the output within the deadlines that have been coordinated with the consumers.

#### For Restructuring the Technical Control System at Associations and Enterprises and Forming State Acceptance Agencies

18. For purposes of intensifying the role of the technical control services in improving quality and creating a reliable barrier on the path of the production of inferior output, the managers of ministries and departments, and associations and enterprises, are to restructure the activity of the technical control services, carrying out for that purpose a series of organizational, economic, and educational measures.

All steps are to be taken to support the active and uncompromising position of the technical control services in locating and preventing defective output and violations of technological discipline, and to increase in the labor collectives the authority of the workers in the control apparatus who are executing their honorable and responsible duty of defending the interests of the state and the honor of the plant's trade mark.

The technical control services are to be reinforced with highly skilled, well-principled, exacting workers.

Workers with the necessary experience in production work and with thorough professional knowledge are to be involved in those services on a broader scale.

The technical control services are to be equipped to a greater extent with modern control and testing means.

19. Taking into consideration the fact that the chief task of the technical control services is the prevention of the production of output that does not correspond to the technical-norm documentation, the workers in those services are to be required to:

- wage a decisive struggle against sloppy workers and violators of technological discipline;

- prevent the reduction of the established volume of control and tests that guarantee the production of high-quality output;

- promptly inform the manager of the association or enterprise concerning instances of the regular manufacture of poor-quality output and the violation of the technological processes and the technical-norm documentation, and



concerning the receipt at the association or enterprise of inferior output from the suppliers;

-- analyze regularly the reasons for the manufacture of inferior output and to make the necessary recommendations to the management and production subdivisions of the enterprises for the purpose of taking steps to eliminate them.

Managers of the technical control services are to be granted the right, in instances of the violation of technological processes or nonconformity of the output to the established requirements, to discontinue the acceptance control of the output at any stage of its production and to suspend the shipment of finished output to the consumer until steps have been taken.

20. It is deemed necessary to introduce at all associations and enterprises the entrance control of arriving components, materials, and semifinished goods, making this the responsibility of the technical control services. For these purposes, special external-acceptance subdivisions are to be created as part of the technical control services and they are to be equipped with the necessary control and testing means.

Raw and other materials, semifinished goods, and components that arrive at an association or enterprise and that fail, on the basis of the results of the entrance control, to conform to the technical-norm documentation are not to be issued or introduced into production.

Ministries and departments, and associations and enterprises, which are the suppliers or raw and other materials and components are to take urgent and exhaustive steps to guarantee the production of high-quality output with a consideration of the result of the entrance control at the consumer's association or enterprise.

USSR Gosplan and the ministries and departments are to prevent the replacement of the supplier of the raw and other materials, semifinished goods, and components until the receipt of the positive results of their tests by the consumer.

21. It is deemed necessary to change the system of paying for the labor and the material incentives for the workers in the technical control services that does relate their wages with the results of the economic activity of the associations and enterprises. The sole criterion for evaluating their labor must be the quality of the output being produced.

22. For purposes of fundamentally improving the quality of the output being produced and carrying out the acceptance of the finished articles and controlling the activity of the associations and enterprises with regard to quality matters, it is deemed necessary to create a special agency of nondepartmental control -- State Acceptance.

That agency is to be subordinated to the USSR State Committee for Standards.

The USSR State Committee for Standards is to carry out, in 1986, the necessary preparatory measures and introduce, as of 1 January 1987, State Acceptance at the associations and enterprises producing the most important output for the national economy and consumer goods, as well as the basic components and the materials for them.

The list of associations and enterprises at which State Acceptance is to be introduced is approved by USSR Council of Ministers on the basis of a recommendation submitted by USSR State Committee for Standards that has been coordinated with the appropriate ministries and departments.

The carrying out of State Acceptance does not remove the responsibility borne by the managers of the associations and enterprises or the technical control services for the quality of the output being produced.

23. The role and responsibility of the USSR State Committee for Standards in carrying out a single state policy in questions of output quality are to be intensified.

The USSR State Committee for Standards is to be required to guarantee:

- the coordination of the ministry and department activity that is aimed at the achievement of stable indicators of quality and reliability, and the high technical level of the output being produced;

- the exertion of an active influence upon the technical level and quality of output by means of the regular improvement of the standards and the bringing of their requirements to the level of the international standards;

- the constant analysis of the work performed by the associations, enterprises, and organizations with regard to questions of improving the quality of the output, and the carrying out, jointly with the ministries and departments, of the necessary steps to discontinue the production of inferior articles, with the complete use of the rights granted to the Committee;

- the high effectiveness of the work performed by the State Acceptance agencies;

- the improvement of the state system of standardization and metrology, and the increase in the effectiveness of the state inspection system for the introduction and observance of standards and specifications;

- the broad participation, jointly with the ministries and departments, in the work of international organizations involved in standardization.

24. Taking into consideration the fact that the state certification of industrial output is an important economic lever for quality control, the USSR State Committee for Standards, USSR State Committee for Science and Technology, and the ministries and departments, when carrying out that certification, are to guarantee an increase in the objectivity of evaluating the technical level and quality of the output. Steps are to be taken to

improve the selection of the specialists to be included in the state certification commissions. There is to be strict monitoring of the work of the certification commissions and an increase in their responsibility for fulfilling the duties entrusted to them and for the correct use of the rights granted to them. Personal responsibility for the objective evaluation of the output being certified is to be placed on the chairman of the state certification commission.

25. The USSR State Committee for Standards is authorized to invite scientists and highly qualified specialists to participate as supernumerary experts for carrying out state expert examination of the technical-norm documentation and the certification materials for especially complicated output.

26. USSR State Committee for Standards, within a three-month period, is to submit to USSR Council of Ministers its recommendations for introducing into the Statute Governing the USSR State Committee for Standards and into the structure of its central apparatus the changes evolving from this decree.

#### For Improving the Training, Retraining, and Refresher Training of Cadres

27. Taking into consideration the fact that the problem of improving quality is a complicated and multifaceted one, it is necessary for the managers at all levels -- from the minister to the foreman -- to master the present-day requirements with regard to the development and production of high-quality output. The ministries and departments and the associations, enterprises, and organizations are to carry out a fundamental restructuring of the system of training, retraining, and refresher training of cadres. They are to carry out the planned and continuous raising of the proficiency level of the workers and specialists with the purpose of guaranteeing the conformity of their professional training to the constantly rising level of technology and technological schemes.

Broad use is to be made of the forms of instruction that have proven their value in the practical situation, primarily the courses that are targeted to a specific need, schools for studying advanced labor techniques and methods, clubs, and seminars.

It is to become a general practice to teach the ordinary workers and engineer-technical workers who are newly arriving in production the peculiarities of the technological and labor processes and to acquaint them in detail with the requirements made on the quality of the output to be produced and the operations to be fulfilled. When changing over to new technological processes and assimilating new types of output, the workers are to be given instruction. This is to be viewed as an important component of the preparation of production. The proficiency ranks (classes, categories) of the workers are to be raised only after those workers have undergone the appropriate instruction.

Universal instruction of ordinary workers and engineer-technical workers on quality matters is to be conducted in 1986-1987.

The ministries and departments are to increase their exactingness toward the association and enterprise managers in improving the training, retraining, and refresher training of the cadres.

28. In order to promptly train and retrain workers and specialists at associations, enterprises, and organizations, it is established that the developers of new technology and technological schemes prepare, during the process of their development, recommendations with regard to the training of cadres, curricula, and teaching aids, and, if necessary, develop documentation for training equipment and other technical means.

The ministries and departments are required to organize, beginning in 1986, permanent courses at the base organization of the enterprises that are developing and manufacturing new technology and technological schemes. The managers of associations, enterprises, and organizations are to be authorized to send workers and specialists to attend courses to study the new technology and technological schemes for a period of up to two months according to the procedure and terms stipulated by USSR Council of Ministers Decree No. 46, dated 17 January 1980.

29. The USSR Ministry of Higher and Secondary Special Education, Academy of the National Economy under USSR Council of Ministers, the USSR State Committee for Vocational and Technical Education, the Councils of Ministers of the union republics, and the ministries and departments in 1986-1987 are to introduce into the curricula of the higher and secondary special educational institutions, vocational-technical schools, and institutions, to raise the proficiency level of the specialists and workers, the study of technical, economic, and legal problems of improving the quality of output and to prepare the necessary teaching aids. They are to guarantee the training of cadres with a thorough mastery of modern knowledge and the methods of creating and producing high-quality output. They are to expand in the special departments of the existing higher educational institutions the retraining and refresher training, on the basis of requisitions issued by ministries and departments, of association and enterprise specialists with regard to the vitally important questions of improving the quality of the output.

**For Developing the Workers' Creative Initiative in Producing High-Quality Output and in Reinforcing Executive Discipline**

30. In order to more broadly involve workers in the resolution of the questions of improving the quality of output and production, it is deemed desirable to create at the associations and enterprises, and at shops and sectors, quality groups as forms by which all the workers can take specific participation and exert an active effect upon the complete improvement of the

quality of the output being produced and the operations to be fulfilled, giving this the nature of a mass public movement.

The managers of associations, enterprises, and organizations, jointly with the trade-union organizations, are to channel the activity of the quality groups

primarily into the preparation and introduction of recommendations for improving quality, for improving the technological processes, and for organizing labor and production. They are to guarantee the selection of skilled and initiatory leaders of those groups. They are to carry out the regular instruction of the members of the quality groups and to render all kinds of engineering support to their work. They are to use various forms of material and psychological incentives for the active members of the quality groups. They are to propagandize broadly and convincingly the importance and significance of the work being done by the quality groups and to devote special attention to publicizing their work and presenting it in a graphic way.

It is established that the managers of associations, enterprises, and their structural subdivisions bear the responsibility for creating the necessary conditions for the creative work of the quality groups and for the prompt consideration of the workers' recommendations and the providing of regular information on the implementation of their recommendations.

31. The managers of associations and enterprises, and the party and trade-union committees are to:

a) make broader use of the opportunities of the brigade form of organizing labor in order to improve the quality of the output, and intensify the role of the collectives in the brigades, the brigade councils, and the brigade-leader councils in this matter. They are to achieve a situation in which not a single instance of violation of technological discipline or the production of inferior output remains unnoticed by the brigade collective, and in which the sloppy workers are subject to the appropriate material and psychological punishment. They are to take into consideration the quality of the work performed by each member of the brigade when determining the coefficient of labor participation.

It is deemed necessary for the production brigade to bear collective responsibility for producing inferior output and to compensate the damages from the brigade earnings, and when distributing those earnings to take into consideration the specific blame borne by individual workers;

b) guarantee the introduction of the experience at the AvtoVAZ Production Association and other advanced enterprises in certifying parts, units, and assemblies for the plant's quality seal. The brigade collectives that produce output with that seal and that have achieved defect-free work are to be given the title "Outstanding Quality Brigade" and are to be given the right to work with the brigade quality seal. Increased amounts of material incentives are to be established for these collectives.

32. For purposes of intensifying the workers' self-interest and increasing their responsibility for the quality of the output being produced and the operations being carried out, it is to be recommended to managers of associations, enterprises, and organizations, when establishing additional payments for workers for high professional skill and raises for foremen and other engineer-technical workers for high production achievements, that they take into consideration first of all the quality of their labor and their observance of technological discipline. Additional payments and raises are not to be paid for any month in which there have been instances of defective work or a reduction in the quality of the output. In the event of the regular production of inferior output or a substantial reduction in its quality, those additional payments are canceled completely.

33. It is deemed desirable to intensify the material responsibility for the damage that the workers and employees cause to the enterprise while executing their labor duties as a consequence of the manufacture of inferior output, or the careless spoilage or destruction of materials, articles, semifinished goods, or other output. This responsibility is to be established in the amount of the direct actual damage, but no more than the average monthly earnings.

The draft version of the Ukase dealing with this question is to be submitted to the Presidium of the USSR Supreme Soviet.

34. The right is to be granted to managers of associations, enterprises, and organizations to reduce for a period of up to three months the proficiency ranks (classes, categories) of workers as a result of their crude violation of technological discipline, and also for other serious violations that have led to the worsening of the quality of the output being manufactured by them. At such time the restoration of the rank (class, category) is carried out in the procedure that is established for assignment of the ranks (classes, categories).

35. When organizing the socialist competition, first-priority attention is to be devoted to the fundamental improvement of the quality of output, to the successful fulfillment and overfulfillment of the planned assignments and pledges for increasing the production of output with the highest category of quality and for assimilating new types of materials, machines, equipment, and high-quality commodities for the public.

Individual and collective forms of socialist competition which have proven their value in the practical situation are to be developed, and they are to be used for purposes of achieving a high quality in the work to be fulfilled, and for the purposes of propagandizing and disseminating the advanced procedures and methods in labor. Competition is to be extended among related brigades, shops, sectors, associations, and enterprises according to the "worker's relay baton" principle. The role of contests for the title "Best in the Profession" is to be increased.

There is to be an increase in the work performed by brigades for creative cooperation among ordinary workers and engineer-technical workers in resolving the specific questions of improving the quality of output at all stages of development and production.

36. The organizations of the NTO [scientific-technical societies] and VOIR [All-Union Society of Inventors and Efficiency Experts] at associations, enterprises, and organizations are to guarantee the broad involvement of the leading production workers and the scientific-technical public in the

resolution of specific tasks of the fundamental improvement of the quality of output. It is to become a general practice to hold contests and reviews for the best organization of that work. Maximum use is to be made of the proposals by inventors and efficiency experts with regard to improving the quality of output.

37. In order to encourage worker collectives at production and scientific-production associations, enterprises, scientific-research, and construction planning-and-design and technological-planning organizations, five additional USSR State Prizes are to be established for outstanding achievements in the fundamental improvement of the quality of output and consumer goods having the greatest importance to the national economy.

Ten USSR Council of Ministers prizes in amounts from 15,000 to 20,000 rubles are to be established for the attainment by production labor collectives of stable high quality in the output being produced.

38. The USSR State Committee for Television and Radio Broadcasting and the editorial offices of newspapers and magazines, jointly with USSR State Committee for Inventions and Discoveries and USSR State Committee for Standards, are to broadly publicize the work experience of the collectives at associations, enterprises, and organizations, advanced production workers, quality groups, technical control services, State Acceptance agencies, and the party, soviet, trade-union, and Komsomol organizations in guaranteeing high indicators for the quality of output for the national economy and the public, and subject to sharp criticism sloppy workers and violators of standards, specifications, and technological discipline.

The USSR State Committee for Science and Technology and the Exhibition of the Achievements of the USSR National Economy, jointly with the USSR ministries and departments and the Councils of Ministers of the union republics, are to intensify the propagandizing of advanced experience in the area of raising the technical level and improving the quality of output.

The USSR State Committee for Publishing Houses, Printing Plants, and the Book Trade and USSR State Committee for Standards are to take steps to achieve a considerable increase in the publication of scientific and popular-scientific literature on problems of quality, standardization, and metrology.

39. The USSR Ministry of Justice and USSR State Committee for Standards are to prepare within a three-month period, with the participation of the interested USSR ministries and departments, and to submit to USSR Council of Ministers recommendations concerning the introduction into the legislation that is in effect the changes evolving from this decree.

The CPSU Central Committee and USSR Council of Ministers express their conviction that the workers and employees and the scientists and engineer-technical workers at associations, enterprises, scientific-research, construction planning-and-designing, technological-planning, and other organizations will do everything necessary for the successful fulfillment of the assigned tasks for the fundamental improvement of the quality of output and the operations to be fulfilled.

Secretary of CPSU Central Committee  
M. Gorbachev

Chairman of USSR Council of Ministers  
N. Ryzhkov

Moscow, The Kremlin, 12 May 1986, No. 540

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## INVESTMENT, PRICES, BUDGET, FINANCE

### ACADEMY ECONOMIST CALLS FOR RETAIL PRICE REFORM

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[Article by A. Deryabin, sector deputy of the Economics Institute of the USSR Academy of Sciences, doctor of economic sciences and professor, under the rubric "Problems of Price Formation": "Improving the Pricing System: A Discussion"; material in all capital letters originally published in boldface]

[Text] The highest aim of CPSU economic strategy is the steady ascent of the material and cultural standard of living of the people. Its realization is directly connected with accelerating socio-economic development and intensifying and increasing the efficiency of social production.

Retail prices for consumer goods are an important control for the execution of a purposeful social policy. On the one hand, they are, along with wages, an appreciable indicator of the efficiency of social production. On the other hand, the provision of all types of monetary income with various funds of consumer goods and paid services is one of the chief conditions for raising the role of wages and stimulating the productivity and quality of labor. The observance of this condition is linked with the prevailing system of retail prices, which has a number of specific features, in particular common access to food products in everyday demand, health and beauty aids and communal, domestic and other paid services. The price system maintains relatively low levels for children's products, cultural items and household articles. Prevailing retail prices for basic consumer goods are unified and stable.

The advantages of the retail price system are frequently taken for granted. They are, however, the result of purposeful pricing policy and are an indisputable conquest of socialism. They must therefore be reinforced and developed. It is necessary to strive for the retention of the merits of the Soviet pricing system in developing proposals and recommendations for improving the retail price system and implementing measures in this realm.

Unfortunately, retail price changes over the last two decades were carried out under pressure of the needs of the times, largely random and contradictory. They were frequently implemented quite late and without proper study, which furthered a sharpening of the overall problems of price formation for consumer goods and led to a weakening of the principal advantages of retail prices.

The social thrust of the prevailing pricing system has been substantially deformed. For example, whereas before the share of net income (profits and taxes from turnover) in practice always increased to the extent of growth in the absolute value of prices and product quality, today the opposite tendency has been detected. This signifies that those buying more expensive and high-quality goods participate less in the formation of enterprise and state-budget income than those who acquire lower-quality goods. This "general law" is to a certain extent typical of prices for goods and services that satisfy especially important requirements from a social point of view. Thus, the share of turnover tax and profits, and sometimes their absolute values, in the prices for inexpensive televisions, refrigerators, washing machines and other goods is higher than in the prices for more complex and expensive articles.

Some changes in prices contradict party social policy. Radical measures to accelerate the solution of the housing problem have recently been undertaken. The state, in particular, grants preferential and sometimes even non-refundable loans to individuals building their own homes. The initial fee has been reduced and the payment period has been extended to 10 years for entering a housing cooperative. Benefits are also granted to those who participate in solving a most important social problem--the housing problem--using their own labor or personal incomes. It is surprising, however, that prices for many types of building materials and appliances are also increasing at the same time. It is becoming absurd. For example, the price for linseed oil is higher than that for vegetable oil, for several types of wallpaper higher than chintz, synthetic wallpaper cement higher than the price for flour etc.

The recent elimination of various types of price distortions, as well as a regard for new objective socio-economic conditions of consumer goods production and sales, have brought about the necessity of deep changes in the system of retail prices. The discussion concerns radical reform of the pricing system for all consumer goods and the tariffs for paid services.

Changes in retail prices and their levels and relationships, however, have political consequences as well as economic and social ones, since they touch on the immediate vital interests of all members of society. They are inevitably linked with a break in the consumption patterns that have taken shape and the extant habits and tendencies. It is therefore essential to consider retail prices in detail in all of their aspects and to develop a program that would include comprehensively well-founded measures for improving the retail-price system. It is expedient to prepare programs with the broadest possible discussion, which will permit the study and awareness of all sensible suggestions. Qualified and productive discussion can begin only in a case where all of the basic problems arising today before price formation, particularly for consumer goods, have been defined. This relates first and foremost to the problem of subsidies for the production of foodstuffs.

As a consequence of the raising of procurement prices for agricultural raw materials and growth in wages in the food sector, an ever greater body of food products is being manufactured with expenditures that exceed retail prices, and this is leading to the unprofitable production and sale of these products. As a result, negative balances for the special-loan accounts paid off through state-budget income are being formed in the special accounts of Gosbank [State

Bank]. For 1987, the state budget has envisaged this type of subsidy on the scale of 58 million rubles.

Some economists, based on that fact, as well as taking into account the specific shortage of animal-husbandry products, are proposing to eliminate both the unprofitability and the shortage through raising the retail prices for these goods at least to the level that would cover the expenditures for their production and sale.

This proposal, however, requires consideration of the scholarly and practical aspects of the problems of subsidies and shortages, and it is hardly possible to agree with it. From a scientific point of view, the presence of subsidies, as well as the opposite category, a tax on turnover, cannot be considered a shortcoming of the retail price system. The point is that the socialist state, with all of the might of the economy at its disposal, has the opportunity of establishing and supporting relatively high and low prices, i.e. monopoly prices. V.I. Lenin pointed out that "socialism is nothing other than a state-capitalist monopoly oriented in favor of the whole people and to that extent ceases to be a capitalist monopoly." (Footnote 1) (Lenin V.I. Complete Works, Vol 34, p 192.) Consequently, the economic nature of plan prices makes possible these deviations of prevailing prices from the values that correspond to the fundamental interests of the people. Thus, no one doubts the expediency of establishing high prices for alcoholic beverages, jewelry from precious metals and stones or imported perfumes and cosmetics, i.e. for goods that satisfy requirements that are far from paramount. But a policy of supporting relatively low prices for the goods that satisfy the most important living needs of man or facilitate the formation of the harmonically developed personality must be conducted therein.

Such price deviations from value do not violate the principle of social equity or payments for labor. In the free sale of all goods, everyone has the right to acquire what he wants. There are no limitations for those who, having high labor incomes, purchase items at prices for which the share of net income is less or lacking altogether. At the same time, the possibility of satisfying primary vital needs is preserved for those who have comparatively low per-capita family incomes. This is equity in the socialist interpretation.

Thus, subsidies for the production of certain types of consumer goods cannot be considered a shortcoming of the retail price system. In the majority of cases today, they have the same social basis as, for example, free education, health care etc. This affirmation, however, does not at all signify that all subsidies must be justified. It should be noted that some of them are not supported by any grounding from either a scholarly or a social point of view. Here just the fundamental necessity of their existence is emphasized. A refusal to do this would signify a refusal of the socialist state to utilize actively the retail-price mechanism to resolve the socio-economic problems of society and the formation of efficient consumption patterns.

The acknowledgment of objective deviations of plan prices from value does not lead to voluntarism in the establishment of the levels and relationships of prevailing prices. The law of value, which defines the boundaries of possible deviations, creates a barrier to this. Such a barrier is the necessity of

observing equality between the sum of net income obtained from the production and sale of consumer goods and paid services and the sum of subsidies and a considerable portion of the expenditures from the social consumption funds.

The point is that a substantial amount of the expenses from the social consumption funds and the subsidies for the production of some consumer goods can be covered basically through the net income obtained in the production of some other consumer goods. The net income created in the sectors producing capital goods can be directed toward these purposes on a relatively small scale, since behind it stands real consumer value--the capital goods--which cannot be objects of consumption.

An important conclusion follows from this. IT IS NOT ENOUGH SIMPLY TO AFFIRM THAT SUBSIDIES FOR THE PRODUCTION AND SALE OF SOME CONSUMER GOODS ARE COVERED BY INCOME OBTAINED FROM OTHER PRODUCTS, AND BALANCED CALCULATIONS OF REAL COVERAGE OF EXPENSES FROM THE SOCIAL CONSUMPTION FUNDS AND THE SUBSIDIES BY INCOME OBTAINED IN THE PRODUCTION AND SALE OF CONSUMER GOODS AND SERVICES WITHIN THE FRAMEWORK OF YEARLY AND FIVE-YEAR PLANS MUST BE CARRIED OUT. Unfortunately, these calculations are not done, and the essential statistical data are lacking. It is necessary to resort to scientific research each time to discover the extent of the imbalance between the indicated quantities.

It is namely this research that has demonstrated that in the last two decades the increase in subsidies and expenses from the social consumption funds for various social and cultural measures has outstripped the growth in net income created in the sectors producing objects of consumption. It should be noted that it will soon be impossible to eliminate this trend without major changes in the retail price system. Furthermore, the situation will worsen, since the effect of various unfavorable factors is increasing. Consequently, the economic problem is engendered not by the subsidies for the production of consumer goods, but by their size, which today exceeds the essential limit of possible deviations. And the violation of this limit leads to a number of negative economic and social consequences. Therefore, the strict observance of the economic limits of possible deviations, and not an artificial break in an objective category--plan prices--that proposes the presence of persistent deviations from value or actual expenditures in prevailing prices, should be the actual task of price formation.

We note that this specific feature of price formation (the maintenance of low prices for commodities that satisfy the primary needs of all members of society) are not only typical of the USSR. In practically all of the socialist countries, as well as the countries that have chosen the path of socialist orientation, comparatively low prices for basic food products are maintained. In many cases where there is a shortage of certain types of commodities sold at low prices, a setting of distribution standards is sooner utilized than a price increase.

Naturally, in order that the deviations of prices for specific commodities not acquire a voluntarist nature in current economic practice, the study of decisions being made is needed. For example, in order to maintain relatively low retail prices for children's products, strict economic calculation is essential. It should argumentatively indicate the purpose (considering

alternative solutions), prove the well-foundedness of the price incentives, calculate the expenditures and indicate the results. Furthermore, the sources for the compensation of the proposed expenditures should be determined, and the possibilities for negative consequences and means of eliminating them should be taken into account. The latter is associated with the utilization of other economic tools (taxes, interest on credit, special financing conditions etc.). The determination of the expenditures or losses in the establishment of low prices for specific commodities and the sources for compensating them arise from the requirements of the law of value.

The problem of subsidies is often equated or combined with the insufficient production of some commodities. In reality, subsidies today are granted basically for goods that are in short supply to a greater or lesser extent. This does not mean, however, that the production of all goods in short supply requires subsidies, or that all goods receiving subsidies are in short supply. For example, subscriptions to the library (supplement) of the journal OGONEK are in short supply, but at the same time, it is one of the most profitable publications. Bread and bakery products are not in short supply to the slightest extent, and demand is fully satisfied. But these products are produced with considerable state subsidies. Of course, in both the former and the latter examples, the question could and to all appearances should be posed as to the well-foundedness of the prevailing prices and their possible alteration. This is not, however, grounds for combining two quite different concepts--subsidies and shortages. And even if an overall balance were to exist between the effective demand and the supply of consumer products and paid services, subsidies for certain goods and services and an increased size of taxes on turnover for others would continue to be preserved.

Concrete calculations show that for the establishment of "equilibrium" retail prices for meat and dairy products, it is sufficient to raise them by roughly 1.5 times. But this is too little to eliminate the subsidies. If prices were raised to the level that would cover all expenditures for production and sale, then the demand for the given products would fall to an amount much lower than the current production volume. Therefore those that propose an increase in prices to this level should also propose a reduction in the production of meat and dairy products at the same time.

It follows from the above that THE EXISTING STRAIN IN RETAIL SALES IS NOT CAUSED BY THE PRESENCE OF SUBSIDIES, which certain economists indicate as soon as the discussion touches on the problem of retail prices, BUT BY THE OVERALL IMBALANCE BETWEEN EFFECTIVE DEMAND AND THE SUPPLY OF GOODS AND PAID SERVICES. It is also necessary to take into account that unsatisfied effective demand is sharply differentiated among population groups that have differing per-capita incomes. Those segments of the population with relatively low per-capita monetary incomes and somewhat average incomes do not have substantial savings formed as a result of unsatisfied effective demand. Their savings reflect a well-defined dedicated purpose: the acquisition of consumer durables (refrigerator, color television, automobile etc.), the entry into housing-construction cooperatives, vacations, transition to retirement etc. The full utilization of the monetary incomes of the indicated population groups signifies that any change in prices is directly reflected in their welfare.

Unsatisfied effective demand, transformed into large and sometimes quite considerable monetary savings, is typical of population groups that have relatively high per-capita monetary incomes and sometimes of average ones. This category of the population cannot fully utilize its labor income at its own discretion, which is the economic obstacle that stands on the path of raising the vested material interest in labor productivity and production efficiency growth. In reality, it is hardly worth any special efforts to have in essence the same consumption pattern as before. Therefore, the recommended changes in prices should be aimed at the considerable expansion of the opportunities of the indicated population groups to utilize their monetary incomes but, naturally, not at the expense of those who have less income.

Proposals to raise prices for meat and dairy products, it seems, proceed from the necessity of creating an overall balance between supply and demand. Otherwise they are inconceivable, since in the absence of an overall balance other goods will immediately be in short supply. The question arise herein, however, CAN COMPLETE BALANCE BE ACHIEVED THROUGH PRICE INCREASES? This measure undoubtedly facilitates a removal of the shortages of certain types of goods, but does not eliminate the overall imbalance without the execution of special measures to block or "write off" the additional income.

Price increases signify first and foremost an increase in the amount of net income, and even if it was provoked by the necessity of making effective demand correspond to the supply of consumer goods, without the execution of special measures it will not only not achieve the indicated equilibrium, but will even strengthen the imbalance. The increased amount of net income with price increases is practically always considered an additional financial-credit resource. The monetary income of the population increases with growth in financial and credit investments in the national economy. And every credit ruble in the end result generates a two- or three-fold increase in the sum of incomes of all types (wages, profits, taxes) through the mechanism of intra- and inter-sector contacts. Consequently, an increase in prices leads to growth in net income and can be a cause of a new surplus of effective demand over the supply of consumer goods arising.

In price increases it is essential to take into account the fact that monetary emissions can cause not only an overflow of the channels of the money supply, but an expansion of credit, non-cash transactions, the acceleration of monetary turnover etc. Growth in the money supply beyond the needs of the sphere of turnover is therein associated with a growth in prices, but the latter requires an increase in the money supply in circulation. The simultaneous effect of these two factors can create an inflationary process that is difficult to overcome. It is therefore necessary to strive for the separation of the indicated factors.

Changes in price levels, including their increase, do not increase production and, consequently, supply immediately. For meat and dairy products, it cannot be expected that raising retail prices will lead to an increase in supply in the future either. It will increase under the influence of other factors, but not under the influence of changes in the retail price level. Recall that currently the granting of subsidies is implemented in such a manner that production, processing and trade are profitable overall. Changes in the



retail price level will therefore not strengthen their vested interest in increasing production and sales, but will only lead to reductions in the state-budget expenses.

Without increasing the proposals, a rise in prices, if one looks truth in the eye, signifies a simple redistribution of what is produced among various population segments. Someone should reduce their consumption so that someone else can increase theirs.

Raising various prices will require compensating the population with relatively low per-capita incomes. It will also be necessary to compensate for the growth and prices to a certain extent for those population groups that have average or close to average per-capita income. This compensation is in its essence differentiated.

The authors proposing an increase in retail prices and insisting on its rapid implementation see real difficulties on the part of providing compensation for price increases to some social groups and segments of the population. There are still, however, no sufficiently positive proposals for conducting such compensation. It still seems that only "a careful study of the mechanisms that compensate for this increase as regards various social-income groups is required." (Footnote 2) (Shatalin S.S. Social Development and Economic Growth. KOMMUNIST. 1986, No 14, p 68.)

WHAT WILL BE THE CONSEQUENCES OF RAISING PRICES AND CONDUCTING DIFFERENTIATED COMPENSATION? Even without special calculations, it can be answered that in sectors with primarily manual labor, the cost of products will increase sharply. And it will be greater than the difference between the level of expenditures and receipts, i.e. the total profit. The transformation of earlier profitable industries or even sectors into unprofitable ones requires the execution of the subsequent stage of price increases and, consequently, once again the compensation for this price increase in the incomes of part of the population. How forcefully the price-income spiral begins to unwind is shown by the experience of several CEMA member countries (Hungary, Bulgaria, Poland). In Hungary, for example, retail prices with partial compensations have repeatedly been increased for the purpose of bringing closer together the proportions of retail prices with the well-founded proportions of wholesale prices and to eliminate the subsidies for a quite broad range of goods. As a result, retail prices and tariffs increased by several times for many food products, as well as for a number of paid services, including housing and domestic ones. It could have been expected that in place of subsidies in these prices and tariffs there would be large income or, at least, normal profit. On 1 Sep 84, moreover, subsidies in retail prices totaled 22 percent for beef, 23 for poultry, 11 for pork and intermediate products, 20 for canned meats, 8 for canned fruits and 50 for children's products, including from 39 to 81 for shoes, 55 for domestic power and 78 percent for transportation tariffs. In this regard, the question arises: IS IT WORTH IT, TO LOWER SUBSIDIES BY A FEW PERCENTAGE POINTS FOR THESE PRODUCTS, TO UNWIND THE GROWTH SPIRAL OF PRICES AND MONETARY INCOME, WHICH HAS ALREADY LED TO A MANYFOLD INCREASE IN FACE VALUES AND INCOMES? IS IT WORTH IT TO TAKE THIS PATH SO AS TO OBTAIN SUCH INSIGNIFICANT RESULTS AT ALL?

It is appropriate here to recall that in Hungary, the increase in prices and tariffs was never fully compensated for. Furthermore, a trend toward gradual decline in the size of compensation was distinctly noticeable. Whereas in 1979-1980 two thirds of retail prices were compensated for by differentiated supplementary payments for the majority of the population (those in the free professions, small-scale producers and private merchants received no compensation at all), recently the automatic compensation of workers in the production sphere has been discontinued. Consequently, they have been placed in the same position with private merchants and small-scale producers and have to "earn" the compensation themselves. (Footnote 3) (See: Aristov G. Ways of Ensuring Effective Demand. VOPROSY EKONOMIKI, 1985, No 2, p 104.) This hardly seems just from a social point of view.

The suggestions that raising prices for individual basic goods can be limited and will not entail growth in the overall level of prices and incomes also do not seem well-founded. On the contrary, substantial basis exists that the appearance of requirements for a constant increase in prices for this or that good with the corresponding monetary compensation of this price growth for at least part of the population can be expected. The necessity of raising prices herein can also strengthen rather than weaken over the course of time. In other words, in this situation the possibility of continuously accelerating growth in prices and income is not ruled out at all.

The principle of pay according to labor can be violated substantially in the execution of a policy of differentiated compensation. The material situation of the population with relatively low per-capita incomes will depend to a greater extent on the size of the compensation received than on the real labor contribution. Among those with comparatively high per-capita income, material welfare will be continuously lowered even in the face of increase in their own labor efforts.

Finally, some consequences of raising prices and the corresponding compensation can be less general but are still important in certain regards. Thus, in the sphere of paid services, where there is a high share of manual labor, a sharp increase in tariffs will occur. This will correspondingly reduce the demand for these services. The level of consumption of services, by the way, is still too low.

Compensation for the price increases of certain commodities with the simultaneous reduction of prices for others is less effective. In this case it is possible to discuss compensation only for all population groups overall, but not for individual social groups that have substantial differences in the patterns of effective demand and consumption.

BUT WHAT WOULD THE REDISTRIBUTION OF RESOURCES AMONG VARIOUS SEGMENTS OF THE POPULATION WITH AN INCREASE IN THE PRICES FOR MEAT AND DAIRY PRODUCTS AND THE PROPOSAL FOR THE FULL COMPENSATION FOR THIS INCREASE FOR THOSE WHO RECEIVE COMPARATIVELY LOW MONETARY INCOME BE LIKE? At the prevailing level of retail prices, say that a family with an income of 70 rubles per person per month spends 10 rubles of these funds for the acquisition of meat and dairy products, which is much lower than the average level of consumption. Prices increase by 2.5 times, and the family receives compensation on the scale of 15



rubles per person. Income becomes equal to 85 rubles. BUT WILL THE FAMILY SPEND ALMOST 30 PERCENT OF ITS MONETARY INCOME ON MEAT AND DAIRY PRODUCTS ALONE IN ORDER TO PRESERVE THEIR PREVIOUS CONSUMPTION PATTERN? It is doubtful. A reduction in the consumption of meat and dairy products through a switching of demand to lower-quality ones will sooner occur. On that basis it can be surmised that those who at the prevailing level of prices cannot make full use of their monetary incomes will at once increase their consumption of these products, even without receiving compensation.

It follows from the above that price increases with full or partial compensation eliminate the possibility of achieving correspondence between supply and demand altogether. This is furthered by the fact that the funds that the state receives as a result of price increases that should be frozen or "written off" (insofar as there is no real material benefit behind them) are used for compensation, i.e. are not withdrawn from monetary circulation.

Thus, the proposals and recommendations of a number of economic scholars to raise the prices for meat and dairy products in the form in which they are advanced today do not have an adequate scientific and practical foundation.

The prevailing objective conditions, however, require the immediate creation of a comprehensive program for improving the retail price system, based on the principal positions developed at the 27th Party Congress.

The new edition of the CPSU Program indicates: "THE PARTY WILL ALSO DO EVERYTHING NECESSARY IN THE FUTURE FOR THE STEADY GROWTH OF THE REAL INCOME OF THE WORKERS AND THE FURTHER ASCENT OF THE WELFARE OF ALL SEGMENTS AND SOCIAL GROUPS IN ACCORDANCE WITH THE ECONOMIC CAPABILITIES OF THE COUNTRY." (Footnote 4) (Materials of the 27th Congress of the Communist Party of the Soviet Union. Moscow: Politizdat Publishing House, 1986. p 152.)

Consequently, the first condition, the strict and consistent observance of which is essential for improving the system of retail prices, should be the elimination of any reduction of the real income of the population overall and for each social group in particular. Therefore, the discovery of the real possibilities for an overall balance of supply and effective demand, the creation of economically and socially well-founded correlations of prices for various groups of commodities and the fuller reflection of socially essential expenditures of labor, quality and the consumer features of articles and services in prices are essential for the fulfillment of the resolutions of the 27th CPSU Congress.

An overall imbalance did not arise in and of itself. There are specific "creators." These are first and foremost those people who work for storage, whose products are not sold. Thus, the Krasnodar Worsted-Wool Combine has accumulated 67 million rubles worth of fabric in its warehouses over the last three years. No less fabric is sitting in the warehouses of wholesale and retail trade. And after all, the workers of this combine have received their wages and bonuses, and even on a greater scale than their colleagues at, for example, the Kalinin Combine, whose products enjoy widespread demand.

The discussion should therefore concern strengthening the economic responsibility of all whose work creates an imbalance between supply and demand. And this responsibility should be direct: if the goods produced go into storage, then there can be no talk of bonuses, and even the wages could be decreased. After all, everyone--from the director to the worker--understands perfectly well that you only spoil raw materials when you produce inferior goods. And no one except them should have to pay for this.

There exist enormous possibilities for surmounting imbalances, and sometimes even shortages, in reducing those significant losses of raw materials and products that are tolerated in the sectors of the light and food industries. And changes in wholesale prices can play a substantial role here. Thus, in the sectors of the meat and dairy-products industry, raw materials are valued not according to actual procurement prices, but accounting prices that are reduced by a half to two thirds. This ensures the profitable operation of the sector and the enterprises, but simultaneously leads to a sharp reduction in the cost of waste and losses from the inefficient utilization of subproducts, buttermilk, whey etc. Only about 40 percent of bone and blood, 30 percent of skim milk, 10 percent of whey etc. are now utilized for food purposes. It is therefore expedient to value raw materials according to actual procurement prices. The wholesale prices for end products should be established at a level at which it is possible to obtain a profit only with the full and efficient utilization of raw materials.

The procedure for allocating raw-material expenditures by types of products also requires alteration. An extremely absurd situation has taken shape today. Meat is unprofitable, while raw leather is utilized in the production of items with high profitability. But how the hides can be profitable while meat is not can only be known to the creators of the instructions for calculating product cost. The low level for the valuation of hides, moreover, is leading to large losses which, in essence, are covered by subsidies for meat. A change in the procedure for distributing costs would therefore sharply reduce the size of subsidies with the simultaneous creation of a greater vested economic interest in the best use of raw leather.

An effective measure limiting the imbalance of resources is the savings of the population, which arise as the consequence of unsatisfied demand. A reduction in credit resources will lead to the fact that it will be more difficult to obtain money for reserves and losses beyond the normal ones. This once again has an economic effect on those who work poorly.

Finally, it is possible to employ measures of a price nature, but in such a manner that they do not cause the interests of a single population group to suffer. It is first and foremost essential to refrain from a stereotypical approach to solving the problems of price formation. Thus, the conventional classification according to product groups is inadequate: meat and dairy products, fish and fish products, confectionaries, fabrics, clothing, knit products, footwear, cultural and domestic articles etc. Each of these groups includes items that satisfy needs fundamentally different in significance. Meat products include table, Braunschweig and liver sausage and goose-liver pate. Fish include grilled Caspian sprat and sturgeon fillet. Footwear includes domestic mass production and some "unconventional" imported

moccasins. All commodity groups could be considered from such an angle. And it becomes possible thanks to this to class goods in detail not by their commodity traits, but by the degree of importance of the needs they satisfy. Naturally, the importance, significance and urgency of the needs should be determined from a social point of view.

At one of the poles of this classification are the goods that satisfy irrational needs and for which there is not the slightest doubt that their consumption should be limited with the aid of prices, for example alcoholic beverages and tobacco products. The situation becomes more difficult with commodities that simultaneously satisfy both rational and irrational needs. It is well known, for example, that some people acquire books not so much for using them for their primary purpose as to demonstrate the level of welfare or simply as an element of interior decorating for the apartment. The same could be said of crystal, rugs, some types of clothing and knit items etc. If the prices for these types of products are simply raised, then prestige consumption not only will not decline, but will even increase. After all, it will become more difficult for many to buy them.

It is necessary to deepen price differentiation instead. Delicatessens should really become delicatessens, i.e. food products acquired in special cases. Also needed is the deep differentiation of prices for industrial commodities. Import goods acquired by the country for freely converted currency should occupy an especial place among them according to price level. Furthermore, prices should be differentiated not only by basic qualitative traits, but by secondary ones as well. These distinctions in goods will not strengthen the social stratification among consumers.

Substantial distinctions, in my opinion, should be introduced in the prices for commodities that have no difference in quality at all or for which this distinction is minimal. The discussion concerns prestige goods that differ from the ordinary ones by special brand names, production in limited quantities, sale in certain stores etc. The proposed change in retail prices will have no effect at all on the interests of the population when the production of ordinary-quality goods is not reduced.

Thus, a policy of stable retail prices for the basic foodstuffs should be continued with a significant differentiation of prices for delicatessen and especially high-quality types of foods that are not the objects of mass demand. Price formation should preserve the extant level of retail prices for mass commodities with a sharp differentiation of prices for especially fashionable, high-quality and imported goods. All changes in retail prices therein must be carried out on a scale that ensures growth in commodity turnover and increase in the overall body of monetary accumulations.

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## REGIONAL DEVELOPMENT

### KAZAKH GOSPLAN OFFICIAL COMMENTS ON REPUBLIC'S 12TH FYP

Alma-Ata NARODNOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 11, Nov 86 pp 2-7

[Article by A. Pak, deputy chief of the Combined National Economic Plan Department of the Kazakh SSR Gosplan: "The Distinctive Features of Our Plan for the 12th Five-Year Plan"]

[Text] Kazakhstan's national economic plan for 1986-1990 is based on a thoroughly scientific conception of acceleration, which was developed under the party's direction. It assumes not simply an increase in the growth rates of production volumes but their increase on a qualitatively new production and economic basis that provides for a shift of the branches to intensive rails of development, dynamic progress on all strategically important avenues, the reorganization of the economy's structure, and a more complete solution of social problems.

The fact that it is planned to increase during the years of the 12th Five-Year Plan the republic's national income by 20.7 percent, or almost three-fold more when compared with the 11th, says a great deal. In this respect, nine-tenths of the growth must be obtained by increasing the productivity of social labor.

The five-year plan provides for significant changes in the main social and economic development ratios. First of all, the correlation between the national income generated and used in the republic is being improved. The amount of national income used for consumption and accumulation will increase by 16.9 percent. In this regard, the rate of its growth will be 3.8 points lower than the rate of growth of that generated. This will permit the investment of national income in Kazakhstan, which has been generated in other union republics, to be reduced.

Considerable changes are planned in the ratio of consumption and accumulation funds. In 1990, it is planned to direct 25.4 billion rubles, or almost 75 percent of the national income as opposed to the 73.2 percent in 1985, toward the population's consumer needs. This is stipulated by the fact that the growth of public production during the current five-year plan will be insured with fewer accumulation norms thanks to the strengthening of intensive factors. The accumulation fund will only grow by 9.6 percent as opposed to the 10.8 in the last five-year plan.

It is envisaged that the increase in the percentage of national income will be achieved by decreasing material expenditures in practically all branches of the national economy. During the five years, expenditures for one ruble of gross output should decrease by 1.1 percent in industry, 7.3 percent in agriculture, 1.6 percent in construction, and 1.4 percent in transportation and communications. The overall savings will reach 155 million rubles.

In accordance with the Intensification-90 complex program, special attention is being paid to accelerating scientific and technical progress. The amount of expenditures on incorporating the achievements of science and technology into production will exceed 1.4 billion rubles only for the branches, which are under the jurisdiction of the republic's Council of Ministers, as opposed to the 1.1 billion rubles in the last five-year plan. A total of 935 shops and sections will be completely mechanized and automated and 800 production and automated lines and 220 automated control systems of various designations will be introduced. The realization of these measures will insure an economic effect on a scale of 794 million rubles.

Production costs will decrease by 636.6 million rubles, 168,000 people will be conditionally released, and the labor of 207,000 workers will be mechanized. The productivity of social labor will grow by 19 percent. Three-quarters of the increase in industrial output and the entire increase in agricultural products and construction and assembly work will be obtained by this.

At the same time, the increase in the capital-labor ratio of labor in the national economy will in the meantime outstrip the increase in its labor productivity by 8.7 points and reach 28.7 percent. This particularly testifies to the additional opportunities for strengthening intensification in all branches of material production.

By the end of the five-year plan, 63.2 percent of the aggregate social product will be created in industry and construction. This describes the primarily industrial direction in the expansion of the economy in the future.

It is important to note that definite changes for the better have been outlined in the five-year plan in the correlation between branches, which produce products in a natural and material form, and the service and transport area. The percentage of the former will increase by 0.3 points and reach 89.7 percent in aggregate social output in 1990. A corresponding decrease in the percentage of the latter is evidence of the assumed decrease in specific outlays by trade, supply and transport organizations per unit of production, although this still remains rather considerable because of the vastness of the republic's territory and a number of other reasons. That is why the work to further decrease these outlays must be continued.

As before, industry will occupy a leading place in the republic's economy. The output of products in this branch will increase by 26 percent during the five years. It is planned to expand machine building and metal working; the oil producing and oil refining branches; and the gas, chemical and petrochemical industries at more rapid rates.

The mastery of producing many new types of products is being provided for. In particular, the republic will for the first time begin producing robotic systems; hydraulic excavating machines; tractors with a framework cab; pipe rolling mills; machine tools and presses with numerical program controls; Steppe wide-cut self-propelled systems; new types of X-ray equipment, transformers and capacitors; polyvinylchloride linoleum with printed designs; electrical engineering items made of plastic; decorative gypsum board; as well as gypsum-board sheets; and other production and technical and consumer items.

A characteristic feature in the compiling of the program for the republic's economic development during the new five-year plan is the planning according to the complexes that unite allied branches by means of a common task. This approach permits the optimum ratios and growth rates of each branch and complex on the whole to be determined and interbranch connections to be seen.

It is natural that the main attention is being paid to the branches that determine scientific and technical progress, especially the machine building complex. This is caused by the fact the solution of the tasks, which the 27th CPSU Congress outlined for the reconstruction of the entire national economy on the basis of the latest scientific and technical achievements, will be impossible without modernizing the machinebuilding branches in the near future and without reorganizing them for the output of new machines and advanced equipment.

In this connection, special demands are being made on the compiling of the plan for the development of the machinebuilding industry. More attention is being paid to matters concerning the increase in the technical level and the quality of its products, planning the output of machines and equipment in tons is being eliminated, the role of economic norms that are aimed at decreasing specific expenditures of the basic types of materials and fuel and energy resources is being increased, and the demands on standards are being made stricter. The 12 May 1986 CPSU Central Committee and USSR Council of Ministers decree on measures to improve product quality radically requires the organizations developing new equipment to design machines, mechanisms, equipment, materials, and instruments which exceed the highest world accomplishments or correspond to them at the very least.

The employees of institutes, design bureaus, enterprises and associations must firmly master the fact that it is completely intolerable to operate only with fixed indicators, which beneficially differ from average ones -- be it in the specific consumption of materials, labor-intensity, savings, durability, etc., when determining the technical level of an item. They must be considered in their totality.

During the five years, the production volume of machinebuilding products will increase by 42 percent; this is 1.6-fold more than for industry in general. The output of metal-cutting machine tools will grow 2.2-fold and of instruments and automation systems -- by 33.2 percent. This will insure the successful realization of the program for accelerating social and economic development because it will contribute to the up-dating of the active part of fixed production capital on a qualitatively new basis.

The production of agricultural machinery will increase 1.8-fold and animal husbandry and fodder production machines and equipment and the spare parts for them -- 1.4-1.5-fold. In order to assure the planned growth rates, it is first of all planned to commission the Kustanayskiy Diesel Engine Works and the Karagandaselmash [Karaganda Agricultural Machinery] Production Association for the production of wide-cut self-propelled reapers for working in a complex with the Don combine. The capacities of the Pavlotar Tractor Works, Tselinogradkormmash [Tselinograd Fodder Machinery] and Tselinogradselmash [Tselinograd Agricultural Machinery] Association and the Mankentzhivmashs [Mankent Animal Husbandry Machinery] and Aktyubinskseilmash [Aktyubinsk Agricultural Machinery] Plants will increase.

This policy will permit the technical re-equipping of agricultural production to be carried out at accelerated rates and the power-to-weight-ratio level of work to be increased in the branch.

At the present time, a fuel and energy complex, which represents the total system for prospecting for and extracting fuel, its processing, and conversion and transporting in order to fully satisfy the requirements of the national economy for fuel and energy, has been formed in the republic.

In general, the output volume of the complex will increase by 25.7 percent during the five-year plan. In this regard, the output of oil production industry products will grow 1.6-fold; the oil refining industry -- 1.4-fold; the natural gas industry-- 2.9-fold; the coal industry -- by 9.2 percent; and electrical energy -- 1.2-fold.

It is planned to commission capacities at the Ekibastuzskaya GRES-2 [State Regional Electric Power Station-2], expand the construction of the Yuzhno-Kazakhstanskaya GRES, and complete the construction of the first phase of the Shulbinskoy GES [Hydroelectric Power Station]. The establishment of Kazakhstan's Unified Energy System will be continued with the construction of the Ekibastuz-Agadyr 1,150 kilovolt electrical transmission lines and a number of 500 kilovolt lines.

The mining of coal will grow considerably during the 12th Five-Year Plan. More than 70 percent will be obtained using the very cheap open-pit mining method. In the Ekibastuz basin, it is planned to commission capacities for the Dostochnyy opencast colliery, in which rotor mining technology combined with conveyor transport, the blending of the fuel, accurate weighing, and shipment will be used for the first time on a large scale. By reconstructing and technically re-equipping the Bogatyr and Severnyy opencast collieries, their capacities will increase by six million tons.

It is planned to reconstruct and technically re-equip the Aktasskaya, imeni Kalinin, Sokurskaya, and Abayskaya mines in the Karaganda basin. It is planned to commission the first phase of the opencast colliery in the Borlinskiy deposit.

The role of oil and gas is growing more and more in the republic's fuel balance. The increase in the extraction of liquid fuel will be achieved by



the intensive development of the Buzachi Peninsula and Zhanazhol oil reserves and the commissioning of the Tengiz, Kumkol, Oryskazgan, Kamyshitovoye, and Zaburunye deposits.

By the end of the five-year plan, the amount of primary oil refining will reach 18 million tons; and the refining depth -- almost 74 percent in contrast to the 58 percent in 1985.

During the five years, it is planned to increase the production of natural gas 3.1-fold in comparison with the previous five-year plan, and gas condensate -- 5.7-fold. The expansion of production will be based on developing the capacities of the Karachaganakskiy gas condensate deposit that is being prepared for operation.

The construction of the Gazli-Chimkent mainline gas pipeline, the Inder-Guryev gas pipeline tap and the second thread to Aktoyubinsk is being provided for.

The construction material and chemical product complex, which unites the branches of ferrous and nonferrous metallurgy; the chemical, petrochemical, timber, and woodworking industries; and the construction material industry, will be developed further. The struggle for their savings and rational use is acquiring special importance during the present stage.

In this connection, the five-year plan outlines steps to accelerate savings and eliminate losses in raw material, materials, fuel, and energy. For example, it is planned to decrease the expenditure norms for ferrous metal rolled products by 21 percent, steel and iron castings and steel pipe by 19 percent, and nonferrous metal rolled products by 16 percent in machine building and metal working per one million rubles of output. The expenditure of boiler fuel will decrease by 5 percent, of thermal and electrical energy -- by 10 percent, and of gasoline and diesel fuel -- by 14 percent. In construction, the specific expenditure of ferrous rolled metal products and lumber material will decrease by 15 percent, and that of cement -- by 13 percent.

The use of secondary resources in economic turnover and the replacement of some materials with others through scientific and technical achievements and improving their qualitative characteristics are provided for.

Nonferrous metallurgy is the leading branch in the construction material complex. Its production volume will increase by 9.5 percent during the new five-year plan. The output of refined copper, zinc, lead, magnesium and its alloys, titanium, alumina, and other metals will grow.

The production of cerite, which is used during the processing of glass for optical systems, will be mastered in the Irtysh Chemical Metallurgical Plant for the first time in the country and the republic; and highly pure minium in the Chimkent Lead Plant.

As is known, a certain lack of proportion between metallurgical production and the ore base has taken shape during the last 10 years. This has hindered its development. That is why the task has been posed during the current five-year plan to eliminate the lagging behind of the ore base and to eliminate the gap that has been formed.

This task will be solved by increasing the processing of the high carbon bauxite of the Krasnooktyabrsk Ore Administration, the bringing of the Belinskiy mine to its design capacity, and the handing over of capacities in the Severnyy and Ayakskiy mines for operation. In the Dzheskazganskiy GOK [Mining Enrichment Combine], it is planned to introduce capacities for mining ore in Mine No 67 and complete the construction of Enrichment Factory No 3. In the Zhezkentskiy GOK, it is planned to uncover and prepare for operations the lower levels of the Orlovskiy Mine. It is planned to take a number of other steps to improve the mining of ore raw materials.

The output of ferrous metal products will grow considerably during 1986-1990. The production of steel and rolled ferrous metal and the mining of iron ore will increase. The production of sheet rolled products with an aluminum coating and six new types of fireproof items will be mastered. In order to do this, it is planned to expand, reconstruct and technically re-equip a number of metallurgical enterprises in the branch. In particular, it is planned to commission the Coke Oven Battery No 8 and the unit for aluminum plating the sheets and to complete the construction of a sheet shop and the reconstruction of the 1700 hot rolling mill in the Karmet Combine; and it is planned to technically re-equip production and modernize equipment in the Aktyubinsk Ferroalloy Plant.

In the Sokolovsko-Sarbayanskiy GOK, it is planned to commission new capacities for the mining of ore to replace those which have quit the ranks; and in the Lisakovskiy GMK the construction of the fourth section of the enrichment factory for producing roasted and magnet-processed concentrates will be continued.

In the chemical and petrochemical industry, it is planned to increase the production of products by more than 1.5-fold, including mineral fertilizer-- 2.6-fold; polyethylene -- 1.4-fold; and sulphuric acid -- 1.6-fold. The production of sodium hydroxide, calcium carbide, tires, and synthetic detergents will increase significantly.

The production of new products is being mastered in the Pavlodarskiy Petroleum Refinery and the Guryevskiy Chemical Plant; large-sized tires -- in the Chimkentshin [Chimkent Tire] Association; and new types of rubber products in the Karagandarezinotekhnika [Karagandar Rubber Equipment] Association.

In order to assure these increases, it is planned to commission capacities at the Rudnenskiy and Kustanayskiy chemical fiber plants and capacities for the production of colored pigments at the Aktyubinskiy Chrome Connection Plant, phosphate pellets in the Karatauskiy Chemical Plant, and large-size and bicycle tires in the Chimkentshina Association. For the first time in

the country, it is planned to commission capacities for the production of a new type of phosphorus fertilizer -- low temperature calcium polyphosphates.

The development of the timber, woodworking and wood-pulp and paper industries during the new five-year plan will be primarily based on the use of products for the chemical and chemical and mechanical processing of wood and the technological chips that are produced in the lumber sections. The work to expand reconstruct and technically re-equip many operating enterprises will be continued. These steps will insure an increase in the output of products by almost 22 percent; of cellulose -- a twofold increase; of paper -- 1.3-fold; cardboard -- 1.4-fold; of wood particle board -- 1.5-fold; and of furniture -- 1.3-fold.

The production of such advanced materials as gypsum cardboard sheets, window-sill asbestos-cement boards, weighted prepared roofing paper, thermal insulating linoleum, and other items will be organized in the construction material industry and the construction industry. It is planned to increase the total production output of products by 20 percent and cement -- by 16.6 percent. The production of corrugated asbestos board should reach 700 million standard sheets by 1990, and that of wall materials -- 3.3 billion pieces of standard brick; of linoleum -- nine million square meters; and soft roofing material -- 130 million square meters.

The technical re-equipping of the Semipalatinskiy Cement Plant, the increase in the technical level of corrugated asbestos board production, and the construction of wall material plants in Aktyubinsk, Semipalatinsk, Dzhezkazgan, Yermak, and Arkalyk were taken into consideration determining the above-mentioned indicators.

A great deal of attention is being paid to the establishment of correct relationships between the production volumes of I and II subunits. As is known, a faster increase in the growth rates of the means of production than in the growth rates of consumer items has been typical of Kazakhstan's national economy over the course of a protracted period. The party's instructions on further raising the material prosperity of the Soviet people have been placed at the basis of the plan for the 12th Five-Year Plan. It provides for a 0.2 point faster growth in the production of consumer goods than in the rates of growth of the means of production. Whereas the total volume of Group "A" industrial production will grow by 26 percent, the output of Group "B" products will increase by 26.2 percent. This is an extremely significant change in the most important national economic ratio.

The political report to the 27th CPSU Congress pointed out that all of the efforts to improve distribution ratios will be of little effect and the task of raising the people's well-being will not be carried out if we are not able to saturate markets with various types of goods and services. The Complex Program for Expanding the Production of Consumer Goods and the Service Area is aimed at this.

In accordance with it, the output of goods for the people in the republic will exceed 12.5 billion rubles (in retail prices) and grow 1.2-fold in comparison with 1985 by the end of the five-year plan. It is typical that all branches of heavy industry will participate in their production along with enterprises in the light, local and food industries.

It is possible to illustrate the growth in the production of goods for the people using examples from light industry. Thus, the output of knitted items will increase during the five years by 38.7 percent; of sewn items -- by 21 percent; and of footwear -- by 16.5 percent. The production of cloth will increase.

In order to assure such a production increase, it is planned first of all to improve the use of existing capacities; reconstruct and technically re-equip the spinning and weaving works and decoration factories in the Alam-Ata and Chimkent cotton combines and the dying works in the Alma-Ata Carpet and Kzyl-Orda Footwear factories; and construct enterprises for the production of especially fine footwear in Alma-Ata and a stocking factory in Temirtau.

The production of light industry products will grow 1.3-fold, and the output of items made from local raw material and the waste products of enterprises will increase 1.4-fold. The manufacturing of a number of new items, including double towels, domestic washers with electrical preheaters, electric toys, etc., will be mastered.

Especially large hopes are placed in the new five-year plan on the agroindustrial complex. Its development will take place under the conditions of a radical restructuring of the management system: A single central body has been established -- the USSR State Agroindustrial Committee and its subunits in the union republics and at the local area. Undoubtedly, this will exert an influence on further increasing the production of agricultural products, raising their quality and, consequently improving the supplying of the population with food products.

The material and technical base of the agroindustrial complex will be strengthened. In general for the republic, it is planned to direct 19.9 billion rubles to its development from all sources of financing. A total of 145,000 tractors, more than 131,000 trucks and much other equipment will be supplied to the kolkhozes and sovkhozes.

The average annual gross agricultural product will increase by 13.5 percent as opposed to the last five-year plan, and its yield calculated per 100 hectares of agricultural land will grow by 16 percent. The harvesting of grain will increase by 24 percent during the five-year plan. The fodder base of animal husbandry will be strengthened, the cattle and poultry population will increase significantly, and their productivity will be raised.

The total output of the delicacy, meat and dairy and fishing industries in the five years will grow by almost 20 percent. It is planned to take steps in these branches for the effective and complete use of raw material resources, for the reconstruction and expansion of existing enterprises, and for the

modernization and up-dating of equipment. The construction of new plants, combines, shops and works of various designations will be expanded on a broad front.

An exceptionally important role has been allotted to the construction complex in solving all of the social and economic tasks. During the five years, 47.2 billion rubles of state capital investments -- an increase of 8.2 billion rubles as compared with the last five-year plan -- must be assimilated in the republic's national economy. This will permit the fixed capital to be increased by 29 percent and a third of its to be updated.

However, not the scale of capital investments but how effectively the resources are used and how rational their branch and reproduction structure are will determine the success of the investment policy.

A distinctive feature of the new five-year plan is the priority directing of capital investments to the technical re-equipping and reconstruction of existing works. A total of 10.6 billion rubles is being allotted for these purposes -- 1.7-fold more than during the previous five-year plan. This will provide an opportunity to significantly accelerate the updating of the main producer goods, especially their active part, and to overcome the tendency toward their physical and moral aging that has taken shape.

Another distinctive feature is the immediate directing of resources to the machinebuilding complex where the achievements of technical progress are given material form. As has already been mentioned, capital investments in the expansion of the fuel, energy and agroindustrial complexes and in the production of construction materials and consumer goods will also grow significantly.

In accordance with the 27th CPSU Congress decisions, important measures have been planned in the republic for the social development and raising of the standard of living of the Soviet people. A total of 25.4 billion rubles are being invested in the social program as opposed to the 21.2 billion in 1985.

The change in the ratio between consumption and accumulation is evidence not only of the policy to raise further the material prosperity and cultural level of the workers but also of the lowering of accumulation norms and the more effective and rational use of the production potential that has been established.

The real per capita income of the population will grow by 13.6 percent during the five years; the average wages of workers and employees -- by 13 percent; payments and benefits, which they receive above their pay for their work, -- by 21.9 percent. In doing this, the income levels and the cultural, everyday and medical services of the different population social groups -- urban and village inhabitants -- will be brought considerably closer together.

Naturally, the purchasing capability of the population will increase with the growth in incomes. In 1990, it is planned to sell more than 17 billion rubles

of different products (minus alcoholic drinks) -- an increase of 33.7 percent as opposed to 1985. By the end of the five-year plan, paid services will grow 1.5-fold and will reach 2.35 billion rubles, and the volume of domestic services will reach 760.6 million rubles. Rational consumption norms for the individual sewing and knitting of knitted wear; the repair of apartments; and photographic, barbershop and passenger transport services will be assured.

It is planned to build housing with an overall area of 33.9 million square meters. This will permit the housing conditions of more than three million of the republic's inhabitants to be improved. It is planned to provide every city, 85 percent of the urban-type settlements and rayon centers with a centralized water supply, a sewerage system with a complete complex for the biological cleansing of waste water will become functioning in 14 oblast centers, and trolleybus lines will be commissioned in Kustanay and Semipalatinsk.

The network of kindergartens, day nurseries, general educational schools, professional technical schools, hospitals, dispensaries, health centers, and cultural and consumer services establishments will be expanded. Large assets are being allotted to the conducting of measures to protect the environment and nature.

In brief, these are the tasks of the plan and the distinctive features in the social and economic development of Kazakhstan during 1986-1990.

Half of the first year of the 12th Five-Year Plan has passed. The first results are being summed up. Let us say right out that they encourage confidence and give hope. The results, which have been achieved during the six months, graphically and convincingly confirm that the tasks in the national economic plan -- although strenuous ones -- are completely feasible and capable of being accomplished.

During the January-June period, industrial production volume in the republic grew by seven percent when compared with the corresponding period of last year -- the annual goal is 4.2 percent. The plan for the sale of products was exceeded by 2.3 percent. Machine building, chemistry, petrochemistry, the fuel and energy complex, and the food industry of the agroindustrial complex were expanded at outstripping rates.

Labor productivity in industry grew by 5.5 percent. Because of this, a more than 80 percent increase in output was obtained with a decrease in its costs. The growth in productivity outstripped the increase in average wages in a majority of ministries and departments.

Kazakhstan's railroad workers transported more than two million tons of freight above the program. Motor transport overfulfilled the freight shipment plan by 6.4 percent.

The incomes of the population were increased. The average monthly pay of workers and employees reached 186 rubles as opposed to 180 in the same period of last year. Positive results were also achieved for a number of other indicators.

Unfortunately, one must state that far from all enterprises, associations and the branch in general are reorganizing their economic activity in the spirit of the requirements of the times. Along with the positive, the results of the first half-year give evidence that many ministries and departments have not eliminated serious shortcomings in work and have not assured the fulfillment of the plan for industrial product volume and sales by all enterprises. Thus, every sixth one is among those lagging behind in the republic's Ministry of Ferrous Metallurgy; and every fifth one -- in the Ministry of Light Industry and the Ministry of Local Industry.

A situation, which is especially unfavorable, has taken shape in the fulfillment of contract deliveries; 354 enterprises, or 23 percent of their total number, have provided 133 million rubles less of products according to the list agreed to in the contracts concluded and the orders accepted for fulfillment. These include the economic subunits of the Ministry of Light Industry that have failed to deliver 20.7 million rubles; of the State Agroindustrial Committee -- 13.8 million; of the Ministry of Local Industry -- 10.1 million; of the Ministry of Ferrous Metallurgy -- 9.7 million; and the Ministry of the Construction Materials Industry -- 7.8 million rubles.

The quality of many types of products being produced also does not satisfy requirements. During the first six months, more than 730 individual batches of non-standard items were banned from sale, and economic sanctions were applied in more than 340 cases. Sewn, textile and leather fancy-goods; bed-linens; cloth; leather footwear; china dishes; household articles; and non-alcoholic drinks were noted for low quality among consumer goods.

The enterprises of the Ministry of the Timber and Wood Processing Industry and the Ministry of Local Industry did not cope with the task to produce products in the highest quality category. When compared with the corresponding period of last year, their percentage in the total production volume decreased by 10.3 points in Guryev Oblast, 5.5 points in Taldy-Kurgan Oblast, 5.1 points in Kustanay Oblast, and 3.8 points in the North Kazakhstan Oblast.

Within the Ministry of Local Industry system, 35 percent of the enterprises did not fulfill the plan for increasing labor productivity. In the Ministry of Highways, these enterprises reached 27 percent, and in the Ministry of Nonferrous Metallurgy and the Ministry of Construction -- every fifth one. In the Ministry of the Fish Industry, Ministry of Grain Products, Ministry of Geology, and the State Committee for Publishing Houses, Printing Plants and the Book Trade of the republic, they achieved growth rates in average wages that outstripped the growth in labor productivity. In the Ministry of the Timber and Wood Processing Industry, Ministry of Grain Products and the Ministry of Construction, the number of production personnel was fixed at over and above the plan.

The Ministry of Light Industry did not cope with the plan for decreasing product costs and overexpended 965,000 rubles. In the Ministry of Nonferrous Metallurgy, every third enterprise was among those lagging behind according to this indicator, and in the Ministry of the Timber and Wood Processing Industry -- 50 percent.



The republic's industry is still making poor use of the production potential that has been created. A total of 29 of the 36 most important projects, which were commissioned during 1980-1985, have still not achieved their design capabilities and failed to produce 208 million rubles of industrial output for this reason. The national economy failed to receive 172,000 tons of cement, 30,400 tons of polystyrene, 381,800 tons of rubber items, 1,300 tons of raw material, and many other products.

Only 44.5 percent of the capacities in the Chirkentshina Association were mastered during the January-June period because of deficiencies in the organization of production and the operation of equipment. The design capacities for the production of polystyrene at the Shevchenkovskiy Plastics Plant, which were commissioned in 1980-1981, are only being 60 percent used as a result of shortages of raw material and materials. In the Kustanayskiy Mining Separation Plant, capacities which were commissioned five years ago, are being 40 percent used because of every type of mess (poor organization of production, limited raw materials, etc.); In the Novo-Karagandinskiy Cement Plant, they are only being 62 percent used as a result of violations of the manufacturing methods.

There is no need to talk about the importance of scientific and technical progress during the present stage. Meanwhile, many ministries are not paying the required attention to this important matter -- just as before. As a result, planning targets for the development of science and technology have remained unfulfilled. The Ministry of the Construction Materials Industry, the State Agroindustrial Committee and the Ministry of Grain Products are especially lagging behind in this matter. Here are only a few examples.

The Tselinogradskiy Ceramic Item Plant of the Kazakh SSR Ministry of the Construction Materials Industry has not incorporated mechanized lines for the sorting and packing of ceramic tiles; the Ministry of Consumer Services system -- a measuring lay-out for making clothing according to individual orders; the Ushtobinskiy and Turgayskiy mechanical repair plants of the State Agroindustrial Committee have not carried out the integrated mechanization of sections. There are quite a few of these cases.

However, despite the still existing shortcomings, the results of the first six months testify that a turning point is coming in the republic's national economy, and that the capabilities for building up work tempos and successfully fulfilling and overfulfilling the outlined plans are beginning to be used more effectively. The intensification of the economy -- this is the primary task of the managers and collectives of associations, enterprises and organizations. This is a duty that the party has placed on everyone and on each one of us.

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## LABOR

### STATE COMMITTEE CHAIRMAN DISCUSSES INDIVIDUAL LABOR LAW

Moscow ARGUMENTY I FAKTY in Russian No 51, 16-22 Dec 86 pp 1-2

[Interview with I. I. Gladkiy, chairman of the USSR State Committee for Labor and Social Problems [Goskomtrud], by ARGUMENTY I FAKTY correspondent A. Gorbacheva: "Personal Labor--Common Good"; date and place not specified]

[Text] The discussion of our correspondent, A. Gorbacheva, with the chairman of the State Committee for Labor and Social Problems continues. (For the beginning of it see ARGUMENTY I FAKTY No 50.)

[Question] The Law on Individual Labor goes so far as to provide for the allocation of credit to citizens who wish to engage in individual labor. Does this indicate that it is not possible to cope with economic difficulties without individual labor activity?

[Answer] The law that has been passed should not be looked upon as a source of supplementary national income. Today the proportion of individual labor activity constitutes .01 percent of the national income. According to USSR Goskomtrud, its increase will be negligible with the introduction of the new law. Social production remains, as before, the basic source of satisfying demands of the Soviet people for quality goods and services.

Individual labor is used for three principal purposes. First, for the fuller satisfaction of public demand for goods and services, especially for the satisfaction of individual tastes, as well as for the broader development of grassroots enterprise and encouragement of skilled craftsmen.

Second, this increase in the activity of people is good for social labor. For example, our country now has 58 million pensioners. Only 10 million of them now work in social production, although many pensioners possess high qualifications and sufficiently good health to continue to work. Housewives, as well as other citizens who for one reason or another do not participate in social production, are also capable of engaging in some sort of labor activity.

Finally, the law provides for citizens the possibility of receiving extra income according to their labor. Furthermore, the USSR Constitution permits individual labor activity.

[Question] The Law on Individual Labor becomes effective on 1 May 1987. Could you describe what kind of preparatory work will be going on in the preceding five months?

[Answer] The Presidium of the USSR Supreme Soviet is instructed to introduce union legislation in conformity with the law as enacted. Similar assignments have been given to the USSR Council of Ministers and to the Supreme Soviets of union republics. Time is needed to work out the licensing, to determine the precise tax system, to prepare certification as well as normative documentation. A great deal of work remains to be done at the local level; that is, to implement the appropriate normative documents for the correct organization of work activity throughout the entire country.

[Question] It's no secret that some citizens have a negative attitude towards people engaged in individual working activity. Apparently, some officials who are making the decisions on questions related to assisting persons who want to engage in individual work are in the same frame of mind. Instead of providing assistance, won't they create obstacles?

[Answer] Article 5 of the law obliges the executive committees of local soviets of people's deputies, enterprises, institutions, and organizations for the purpose of more fully satisfying public demand for goods and services to render assistance to citizens engaged in individual labor in acquiring raw materials, supplies, tools, and other essential property, a ready market, and business premises to rent.

In addition, the law clearly stipulates that USSR Gosstat, its local territorial agencies, and the Councils of Ministers of the union republics are required to make appropriate resources available for the individual work activity of the citizens. It is incumbent on those who may be behaving incorrectly in this regard to make amends. The law is mandatory for all citizens without exception.

[Question] Imagine, Ivan Ivanovich, this sort of situation. A man comes into a local soviet for permission to engage in individual work activity and he is turned down. It is not to be ruled out that arbitrarily they, the local soviet, simply don't want to deal with it, they don't want to take the unnecessary trouble. What's to be done in that case?

[Answer] A citizen who is refused permission to engage in individual work may complain about the actions of the leaders of local soviet organs in the higher Soviet of People's Deputies or in the Council of Ministers of the union republic.

[Question] Let us examine a particular situation. The owner of a private automobile decides to engage in individual work. How will the rate for carrying passengers be established, how will the work be monitored, and how will the amount of the tax be determined?

[Answer] The law provides for transport service by citizens who possess personal automobiles as well as for other services. A citizen expressing the desire to engage in this kind of activity is required to obtain a license. The

cost of transportation, it seems, will be just the same as in official taxis.

About a hundred operators of personal cars have been included in the "taxi experiment" for the transporting of passengers in Astrakhan. Monitoring of the car owner's work will be carried out primarily by the passengers themselves and gosavtoinspektsiya [State Motor Vehicle Inspectorate], and taxes will be levied by the financial agencies on the basis of declarations by citizens of the income they have received.

A citizen caught hiding income by reducing the amount [reported] will in accordance with the law be called to account up to and including confiscation of income and prohibition from engaging further in individual work activity.

[Question] Individual labor activity by citizens capable of doing original work will turn out to be a source of substantial income. Won't this lead to an infringement of the principle of social justice?

[Answer] I don't think one becomes a millionaire by personal labor. Moreover, it should not be forgotten that taxes will be rising progressively along with high incomes. Finally, the state reserves for itself the function of regulating individual labor, even to the point of prohibiting it in the future.

[Question] One last question. Won't the progressive tax lead to the raising of wage scales in certain kinds of work? Previously, an individual contractor would take for a specific service, say, 25 rubles and put it in his pocket. But now he'll be obliged to pay a tax, so at his own discretion he'll raise the rate.

[Answer] You are implying that a customer will be left alone with the one who performs the work and find himself entirely at his mercy. But this is not altogether so. I am mindful of the fact that the principal source of satisfying consumer demand for goods and services has been, and will continue to be, social production.

The country is taking measures aimed at the comprehensive development of this vitally important area of the national economy. The machinery--the forms of organization and payment for labor--is being perfected so that in the final analysis it will bring about an improvement in the quality of public services.

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## LABOR

### GOSKOMTRUD OFFICIAL ON NEW CONDITIONS FOR WAGE REFORM

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 1, Jan 87 pp 99-103

[Article by V. Shcherbakov, member of USSR State Committee for Labor and Social Problems: "Improvement of the Wage System"]

[Text] In accordance with the decisions of the 27th CPSU Congress, an intensive restructuring of the national economy is going on in the country, one of the most important directions of which is putting the wage system in good order.

"A task of tremendous social and economic importance," it was pointed out at the 27th CPSU Congress, "is to increase the effectiveness of the wage system. The elements of wage leveling which have been getting stronger recently and major defects in the area of norm setting of labor and wage organization undermine its stimulating role and retard production growth. Such a situation cannot be tolerated. The size of each worker's pay must be brought into strict accord with the results of his labor. Strict dependence of wage growth on the growth of his productivity constitutes a most important requirement of management under present conditions...."(1)

The decree "On Improving Wage Organization and Introducing New Wage Rates and Salaries for Personnel of the National Economy's Production Sectors" enacted 17 September 1986 by the CPSU Central Committee, the USSR Council of Ministers and the AUCCTU means a qualitatively new approach to the wage system. The wage system is considered comprehensively and takes into account all its basic elements (wage rates, increases, additional payments, bonuses). It is planned to make the wage rate system an effective regulator of wages and to increase the relative share of the rate from 50 to 70-75 percent. A basically new and active approach to the question of sources for raising wage rates and salaries has been developed: the monetary resources required for this have to be earned by collectives' workers themselves as the result of growth of production, its effectiveness, mobilization of internal reserves and improvement of organization and norm-setting for labor.

In introducing the new wage conditions, it will be necessary to solve a number of problems:

to create the necessary conditions for the systematic and universal establishment of a strict dependence of wages on the quantity and quality of labor and end production results and to increase control over the measure of labor and the measure of consumption;

to shift everywhere to the normative method of forming assets for paying wages and to widely use brigade cost-accounting and the collective contract;

to orient the system of moral and material stimulation of personnel toward radically raising the quality of products and performed work, keeping in mind attainment of a world standard. To this end, to single out on the basis of pay workers most closely connected with realization of the achievements of scientific and technical progress engaged in the development, introduction and servicing of new high-output equipment and technology. At the same time, the main criterion of evaluating the vocational training of personnel should be quality;

to provide well-based correlations in the pay of managers, specialists, workers and various occupationally skilled groups of personnel;

to bolster the role of labor collectives in radically improving wage organization, elimination of leveling in pay and distribution of earned monetary resources while taking into account the labor contribution of each person in the total work results and increasing the responsibility of workers for work lapses, violation of labor and production discipline.

The new wage conditions are being established in such a way that economic norms of forming the wage fund (FZP) and the material incentive fund (FMP) have to be, first, stable and, second, differentiated, with account being taken of the special features of production. Such an approach as a matter of fact makes it possible to grade defects of growth norms and to create equal "starting" conditions for earning funds for all enterprises. Stable norms are at the same time a guarantee that the money earned by collectives remains at their disposal and can be used as a material incentive for more intensive work. It should be underscored that the principle of self-financing and non-subsidization of additional expenditures required for going over to the new wage rates and salaries is being introduced in work practice, not in isolated associations and ministries, but in all production sectors of the national economy.

The principle of earning funds is logically continued within an association. The normative method of forming funds for wages is planned to be widely used for organizational subdivisions, especially in the introduction of intraproduction cost-accounting and contract methods of work.

Within the framework of the general wage fund, the wage fund of managers, specialists and employees must be designated on the basis of norms and within the latter (also on the basis of norms), the wage fund of designers, technologists and scientific workers. Furthermore, it is necessary, on the basis of previously adopted decisions, for industrial enterprises and organizations to introduce normative methods of planning the wage fund of line managers and of the quality control service independently.

The wage fund is the principal source for the transition to the new wage rates and salaries. At the same time, in some cases and with the consent of labor collectives, a portion of the monetary assets of the material incentive fund should also be allocated for these purposes in the transition year to the new wage conditions. In subsequent years, the basic sizes of the material incentive fund and the wage fund are adjusted on the basis of the sum used in the transition year.

In development of wage organization, exceptionally great consideration is given to improving the pay of highly skilled, integrated labor and quality of work.

Wage rates of workers are growing 20-25 percent on the average. At the same time, workers engaged in integrated labor receive great advantages in all cases. First of all intersectoral correlations in pay are optimized. A greater growth of wage rates is provided in sectors determining the rate of economic development of the national economy at the cutting edge of scientific and technical progress. These first of all are workers in power engineering, metallurgy, mining and the petroleum and gas production industry and in transport and construction. Wage differentiation is being increased for workers of the machine-building sectors and local industry. At the same time, standardization in the wages of workers of "comprehensive" occupations, performing work of the same difficulty in different sectors of the national economy is increasing. As a rule, a single wage scheme is introduced for repairmen, adjusters, machine-tool operators, workers of start-up and adjustment organizations and so on.

Big changes are being introduced into stimulation of utilization of more integrated labor and growth of skills. In distinction to present wage rates, correlation is increasing in the wage rates of workers of the extreme categories (1-6). In machine building and many other sectors, correlation of wage rates is being set at 1:1.8 compared to the existing ones, for example, 1:1.57 in light industry. In all cases, a progressively growing interrate difference in rates is being introduced. If, for example, the 2nd category rate 8-9 percent higher than the 1st category rate, the 6th category rate is 16-20 percent higher than the 5th category rate.

Workers who create and are the first to introduce new equipment and technology are separately designated.

The wage rates of repairmen and adjusters determining today the use level of machines and equipment are being raised to the level of rates of machine-tool operators, and the general growth of their rates is 32-35 percent. Furthermore, for workers in machine-tool building engaged in adjusting, repair and servicing of especially complex and special-purpose equipment, automatic lines and machine tools with numerical control and flexible production systems, a special eight-category wage scale is being introduced that is higher than for machine-tool workers and adjusters of regular machine tools. As a result, the growth of rates for them reaches as high as 42-52 percent compared to the average 20-25 percent.



In power engineering, higher rates are being introduced for workers in atomic electric power stations. For the highest skilled workers servicing especially complex and powerful turbines, extra-category rates are being established of up to 240 rubles.

In metallurgy higher rates have been designated for workers servicing powerful, integrated and special-purpose equipment in basic production and high-output equipment in quarries.

In light and food industry, wage rates of highly skilled workers will be approximately 1.5-fold greater than the average for the sector.

In transport, special higher rates are being introduced for engineers of long, heavy and high-speed trains, drivers of high-efficiency and complex motor vehicles as well as for people working with trailers.

In construction, a special higher rate is being designated for paying for steepjack work, and rates of top skilled workers have been significantly increased.

Cardinal changes are being introduced into the pay rate system of agricultural workers. For the purpose of establishing here a direct connection between the pay rate and end work results the rates of piece-workers and time-rate workers are being replaced by a single rate for similar types of work. At the same time in all cases the rate is differentiated into two levels. The first is used for advancing money to workers prior to receipt of products and the second for settlement of pay for final products, which undoubtedly strengthens the connection of wages to volume and quality of agricultural products.

For a more accurate evaluation of the real skill of a worker, additional payments for vocational skill, increases for class category and personal merit salaries for workers are being introduced in all sectors. It is important to point out that in distinction to previously operating practice, these additional payments and increases are tied in not to length of service but solely to quality of labor and the real qualifications of a worker. It is especially necessary to point out that for the first time a mechanism is being created not only for more effective rewarding of high-quality labor but also for material responsibility for low quality. With deterioration of work quality, not only are additional payments and increases eliminated but the worker can have his skill category lowered.

Basic changes are being introduced into the pay system for labor conditions. In place of the higher wage rates used today (at unhealthy and at particularly unhealthy work), in most sectors additional payments are being introduced to the wage rate (pay) on the basis of the experience of the Volga Motor Vehicle Plant, the size of which is determined by the enterprise independently on the basis of the results of job certification. Here it is possible to note several essential factors. Unified wage rates are being introduced for the first time in most sectors. Payment for conditions of labor is tied in not to the vocation of a worker but to the real working conditions at a specific job and the actual time of work there. Qualitatively new possibilities are being created for making working conditions healthier and easier.

Taking into consideration that in the current and next 5-year plans, it is intended as a first priority to carry out reequipment of machine building and light industry, a new mechanism of stimulating growth of labor intensiveness has been introduced for the first time in these sectors. Here one may introduce additional payments to workers for greater labor intensive work on conveyors and on flow and automatic lines (up to 12 percent of the wage rate). The specific sizes of these additional payments are established by the enterprise also on the basis of job certification.

For the purpose of raising the prestige of engineering labor, salaries of managers, specialists and employees are being raised on the average by 30-35 percent. Designers and technologists directly engaged in the development of new equipment have been placed in a preferential position compared to other specialists. The wage mechanism of specialists has been made directly dependent on their work results. In place of the two "executive" positions adopted earlier--engineer and senior engineer--distribution of all specialists by categories was introduced. The categories reflect the actual skill level of a specialist, the level of his work qualities and the ability to perform assigned work creatively and independently. In contrast to existing procedure, the conferment of a category does not require a change in the character of labor or transfer to administrative work. For example, in machine building, a technologist or designer depending on his qualifications, can consistently work for the conferment of the 3rd, 2nd and 1st category and the category of a chief specialist. At the same time, the salary may be increased from 130 to 260 rubles. Within each skill category, a broad range of positional salaries is provided. The restrictions employed today on obligatory observance of average salaries based on the scheme and correlation between the number of senior and junior specialists have been abolished. The skill category and salary of specialists are established by an enterprise on the basis of the specialist's certification and comprehensive evaluation of his work qualities.

Correlations in work pay of specialists and workers are being improved. If wage rates of workers grow 20-25 percent on the average, the salaries of specialists are being raised by 30-35 percent. At the same time, just as among workers, personnel are singled out who determine the tempo of scientific and technical progress. Within the framework of general upgrading, the salaries of designers and technologists of specialized products in a sector grow more rapidly. Their growth of salaries as a rule amounts to 40-50 percent. Charts of their salaries are set up in such a way that on the average the earnings of specialists are 15-20 percent higher than of workers. At the same time, the average salary of an engineer is 40 percent higher than that of a worker of the 5th category, the salary of a foreman is 30-50 percent higher than the rate of a worker of the 6th category.

Special attention has been paid to improving the pay of heads of associations, enterprises and organizations. The salaries of these personnel have not been seriously revised for about 30 years. As a result, the level of their pay does not correspond to their role in production. Thus the salary of a

director of a textile combine of group 1, the number of whose workers is 5,000-8,000 persons, is 250-275 rubles, while the average pay in industry exceeds 210 rubles.

On the average, salaries of directors according to the new scheme are being increased by 80-130 rubles. The salaries of heads of production associations are being introduced into the pay scheme.

For particularly large enterprises and associations, additional possibilities are provided for increases in salaries. Where associations, enterprises and their structural units have group-1 indicators exceeding twofold or more, salaries of managers are increased by 15 percent. Consequently, at a large association, for example, at Uralmash, the general director may receive a salary of 575 rubles compared to 330-360 rubles according to the previous scheme in force.

Furthermore, heads of enterprises have been granted the right to establish for all specialists increases of up to 50 percent of salary for high achievements at work and accomplishment of especially important work. Thus for a "line" designer of the highest qualifications working on the solution of complex and important problems, the rate part of earnings can amount to as much as 390 rubles. Such measures undoubtedly create possibilities for improving the pay system of engineering labor.

Under the new pay conditions, it is provided that a wage fund, the rules for changing it (for example, norms of growth and decrease) and the maximum total number of specialists have to be set for each unit. Within the limits of these parameters, each specialist can be promoted in the categories and can increase his salary on the basis of certification. It is natural that the more rationally the rules of forming a wage fund are established and the more according-to-principle and skillfully certification is arranged, the more closely are the salaries of specialists tied in to efficiency and the end result of labor. The better opportunities for raising wages should create a major effect on work, while poor work correspondingly will reduce these prospects and where necessary will relieve a worker of the position he occupied. This is a perfectly new approach which is not only of major economic but also social significance. All these measures not only improve conditions for growth of yield from specialists but also create real possibilities for curtailing the management apparatus, including the elimination of frequently artificial supervisory positions, simplification of management structure and its concentration on key problems of developing the national economy and the specific labor collective.

The implementation of a strategic course for speeding up economic growth on the basis of all-out intensification of production makes new demands on payment of bonuses. In accordance with the decree as of 1 January a new system is being introduced of awarding bonuses to workers, managers, specialists and employees of associations, enterprises and organizations of production sectors of the national economy. This system provides stronger incentives for high end results and an all-out rise in production efficiency.

In accordance with the new system of awarding bonuses, beginning in 1987 a head of an association, enterprise or organization together with the trade-union committee independently establishes conditions for bonus awards to workers, designers, technologists and scientific workers, personnel of the technical control service and specialists and employees for the basic results of operational activity on the basis of the concrete conditions and tasks facing the respective units, while USSR and union-republic ministries and departments together with the respective trade-union organs establish a regulation on awarding bonuses to supervisory personnel of associations, enterprises, construction, railroad transport and agriculture.

In this connection, the use of "Basic Provisions on Awarding Bonuses" enacted by the USSR State Committee for Labor and Social Problems and the AUCCTU and the sectoral "Model Provisions" approved by ministries and departments in agreement with the respective trade-union organs are abrogated.

Moreover, the rights of associations, enterprises and organizations have been significantly expanded in the use of special bonuses. They were granted the right to create a single material incentive fund with the exception of monetary assets for special bonus-award systems and to determine independently sizes, manner and time of their payment. An objective was set to boost the stimulating role of bonuses in the fulfillment of plans and contractual commitments for deliveries of products (shipment of freight), raising the technical level and quality of products (work), raising labor productivity, reducing product cost (work, shipment of freight) and economizing all forms of material resources.

Basic ways of solving these tasks were determined:

to change over from individual bonuses to crediting of bonuses as a rule to the collective of the brigade, the structural unit (sector, shop, department) as a whole;

not to award bonuses to collectives and individual workers guilty of worsening the quality of manufactured products (work), violation of technological discipline, nonobservance of technical conditions and standards, receipt of complaints and nonfulfillment of delivery contracts;

to award bonuses to collectives of brigades primarily for fulfillment of production and fixed targets set on the basis of sector and shop plans:

to award bonuses to designers, technologists and scientific workers first of all for developing and introducing new equipment and technology corresponding to world achievements and for raising the quality and reliability of the products being put out;

to make bonus awards to personnel of the technical control services depend only on indicators of product and work quality.

Bonuses for members of brigades within the limits of the overall credited sum are determined in a differentiated manner in accordance with personal contribution to the general results, and maximum size is not limited.

It was prescribed that a bonus for fulfillment of contract deliveries must be no less than 50 percent of the total amount of the bonus for basic results of economic activity. In case of nonfulfillment of contract deliveries, 50 percent of the bonuses credited for other work indicators must be reserved and can be paid only on completion of deliveries.

The new wage system fully corresponds to improvement of the economic mechanism, to consistent expansion of economic methods of management and to development of cost accounting and self-reimbursement. The person who works better receives real economic guarantees that he will be earning more.

Expansion of economic independence can occur only on the basis of simultaneous raising of responsibility for the results of management. Raising wage rates and salaries and abolition of a considerable number of restrictions regulating payment of money to specific workers is accompanied by the simultaneous strengthening of control over the total amount of monetary assets used in remuneration of labor.

For the introduction of the new wage rate conditions, associations and enterprises are permitted to use the wage fund and a part of the assets of the material incentive fund formed in accordance with the new conditions of management. No additional grants from the state budget are issued. Consequently, the necessary funds should be sought only from internal sources. Associations and enterprises together with trade-union committees should work and perform a large complex of technical, organizational and economic measures ensuring curtailment of the number of personnel and economy of existing assets for reumuneration of labor. This can be achieved primarily by raising the technical level of production, reducing the share of manual labor and improving its conditions, carrying out certification and rationalization of jobs, ensuring their balancing with manpower resources and raising efficiency in the use of fixed capital and capital investment. There will have to be a radical change point in the dissemination of collective forms of labor organization and stimulation aimed at end results. First of all in the introduction of cost-accounting and contract principles for the operation of brigades, sectors and shops.

Raising wage rates and salaries must be accompanied by a radical change in norm-set labor and improvement of its quality. Raised wage rates and salaries can be introduced with accumulation of the necessary assets and readiness of labor collectives to carry out this measure.

Special commissions should be created for guiding all the work relating to the changeover to the new wage conditions at enterprises. They should be headed by the director and include heads of corresponding services and units, leading production workers, brigade leaders and representatives of public organizations.

Introduction of the new wage conditions is planned to start in 1987 in proportion to the preparedness of associations, enterprises and organizations

and their procurement and mobilization of funds needed for this. The entire work should be completed in all production sectors in the course of the present 5-year plan.

The new wage system creates the basis for increasing the economic independence of enterprises and increasing their responsibility for the results of production activity and development of cost-accounting and self-financing, which is fully in keeping with the spirit of the new edition of the CPSU Program and Basic Directions of USSR Economic and Social Development for 1986-1990 and for the Period to the Year 2000.

#### FOOTNOTE

1. "Materialy XXVII Syezda Kommunisticheskoy partii Sovetskogo Soyuz" [Materials of the 27th Congress of the Communist Party of the Soviet Union]. Moscow, Politizdat, 1986, p 259.

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## EDUCATION

### HIGHER, SECONDARY EDUCATION MINISTER ON NEEDED REFORMS

Moscow VESTNIK VYSSHEY SHKOLY in Russian No 12, Dec 86 pp 22-33

[Speech by G. A. Yagodin, minister of higher and secondary specialized education; date and place not specified]

[Text] We are all under the enormous influence of the speech by Comrade M. S. Gorbachev, general secretary of the CPSU Central Committee. This speech provides an answer to our innermost hesitations and concerns, is responsive to the hopes and expectations of higher schools, requires deep thought and energetic actions, and has fundamental importance for strengthening the country's personnel potential and increasing the responsibility of higher schools.

We listened with enormous attention to the report of Ye. K. Ligachev, Politburo member and CPSU Central Committee secretary. The clarity and significance of the tasks which he posed arm us with a long-term work program.

Our conference is acquiring a special and fundamental importance thanks to the enormous attention that party and state leaders are devoting to its conduct and to the participation of party Central Committee Politburo members and candidate members and Central Committee secretaries in its work. This is yet another display of the party's fastidious concern for expanding higher education.

Ye. K. Ligachev's report provided an exacting analysis of the condition of higher schools and of the communist indoctrination of students. We need such a frank discussion very much. It inclines us toward strenuous work in radically improving the teaching of the social sciences and in developing Marxist-Leninist theory. Difficult work lies ahead. The party has assigned social science departments tasks whose equal higher schools have not had in history. We have opportunities. A total of 39,500 instructors are working in the 3,392 social science departments in the country's VUZ. This is a large intellectual and educational potential. However, it is not being used sufficiently effectively. The work of the social science departments does not satisfy the high requirements that the party is placing on us under modern conditions. The quality of teaching and the level of scientific research must be raised. Many social scientists are cut off from life and do not know the practical problems in the development of the country, region and institutes in which they work.



Insufficiently high qualifications, the absence of the necessary competency in teaching personnel, unnecessary specialization in social science disciplines, and their definite disconnections and isolation within narrow professional limits -- all of this lowers the effectiveness in teaching and indoctrinating students and undermines their confidence in social sciences.

The implementation of the policy, which the 27th party congress developed for accelerating the country's social and economic development, requires a thorough restructuring of all spheres of social life, including higher and secondary specialized education which is responsible for the personnel support of society's scientific, technical, economic and entire spiritual progress. The CPSU Central Committee draft "The Main Directions in Restructuring Higher and Secondary Specialized Education in the Country" outlines an extensive program for the coming reforms and helps to develop constructive measures for overcoming negative phenomena and for finding an outlet to new qualitative frontiers.

The thorough and consistent integration of education, science and production is the basis for modern professional education. A shift to new principles for the interrelationships between higher education and the branches of the national economy and the strengthening of their personal interest in raising the level of training and retraining of personnel and in considerably improving their use in the national economy are being provided for during the restructuring process.

Restructuring assumes a sharp turn toward the development of a student's independence and his creative abilities, the formation of a responsible attitude toward his selected profession in him, and his formation as a citizen of the socialist motherland. A large series of measures is being undertaken for this purpose. It includes improving acceptance rules so as to take the professional orientation of the school-leaver more fully into consideration, reducing the mandatory lecture-hall load on students, freeing time for independent work and scientific research, dividing student groups into smaller groups, and improving individual work with each student. The restructuring provides for the introduction of intensive instructional methods that are oriented toward developing the student's critical and independent thinking and firm convictions. And finally, the development of all forms of creative activity -- from school work and social work to amateur talent activities-- and the development of a system of student self-government.

Higher schools have been called upon to prepare highly qualified specialists for all branches of production, science and culture, who are utterly devoted to the Soviet motherland and to the Communist Party. We must teach them to solve any, including the most difficult, tasks that our country must face when improving social development during the scientific and technical revolution. Restructuring is also necessary for this.

The restructuring touches everyone: every student and every instructor; however, we realize that many are still not prepared for it. They still do not know how and what to do. Some do not believe that it is possible. They are not psychologically attuned. They do not know how.

In this regard, social science departments have a special responsibility to the party for the restructuring of higher schools. They are the ideological departments. Students of all specialties study Marxism-Leninism, and we have a right to expect purposeful work from social scientists in publicizing, giving concrete definition to and implementing the decisions of the 27th CPSU Congress. It is important to lay bare the essence of the restructuring and its necessity before each student and to make him an active and interested participant in this process.

The restructuring is a practical application of the theory of scientific communism to the present-day situation. Many propositions in the restructuring are the direct embodiment of theoretical propositions in Marxism-Leninism. Thus, the integration of education, production and science satisfies K. Marx's ideas about converting production into an experimental "material, creative and topically embodied science" under the conditions of a communist social and economic structure and a rapidly developing science -- into a direct productive force (cf. K. Marx and F. Engels, "Sochineniya" [Works], Vol 46, Part II, p 221). The combining of the training process with production work is one of the most powerful ways to reconstruct society and thoroughly develop the personality.

Being a guide for action, Marxist-Leninist teachings are creatively enriched and developed in accordance with new historical conditions and the vital creativity of the masses. The duty of VUZ social scientists is to participate actively in developing the theoretical aspects of the restructuring. We are talking about the further creative development of revolutionary theory, the study of new phenomena and objective tendencies in social development, and the determination of effective social mechanisms for the restructuring and its key economic factors.

The restructuring is more and more coming to light as a multifaceted process of changes that have a revolutionary nature based on their results. Comrade M. S. Gorbachev points out: "The further we move in restructuring, the more the complexity of this task is revealed and the more fully the enormous scope and volume of work, which is facing us, are revealed. It is becoming clearer how far many ideas about the economy, management, social questions, the state system, democracy, indoctrination, education, and moral requirements are still lagging behind today's needs and tasks and, moreover, the tasks of further development.

"It is necessary to remove layer by layer the problems that have accumulated in all spheres of social life and to deliver ourselves from what has been chewed to pieces, boldly moving toward creative solutions."

Social scientist instructors are the advanced detachment of higher schools. They conduct propaganda work and organize the political and indoctrinational process. As a rule, their best representatives are included in VUZ party committees. Their high responsibility for the political situation in their collectives comes from this. They can and should do everything so that an atmosphere of efficiency, exactingness, unity of word and deeds, comradely

criticism, and mutual help is created in VUZ, that is, a moral climate without which it is impossible to eliminate existing shortcomings rapidly and effectively and deploy a broad front for the struggle to implement the decisions of the party congress.

#### Increasing the Ideological, Theoretical and Methodological Level in Teaching Marxism-Leninism.

The main thing in teaching the social sciences, on which we should think and work today, is its quality. It does not satisfy us. That is why the task of creatively renewing the content of instruction and overcoming the chronic illnesses -- formalism, political situationalism and casuistry -- in its methods is arising. The greatest defect, about which the congress talked, is the alienation of social sciences from life and the divergence of wordy declarations from the actual state of affairs in society. Our social scientists have become great masters of abstract theorizing. A quotation and slogan often receive the status of scientific proof and replace the search for truth. Many instructors permit a simplified and easy treatment of the complex problems in the development of our society and avoid an analysis of today's new problems that trouble youth.

We have become accustomed to repeating the Leninist formula: The dialectic is the revolutionary spirit of Marxism. How often is there not enough of this spirit for us! You see, this is a very fundamental methodological question in studying Marxism-Leninism. The ability to analyze reality from dialectical positions forms the very essence of a realistic party approach. Only the mastery of it will permit the entire truth to be finally revealed and students to be taught optimism in the struggle and the overcoming of obstacles on the path to achieving the goals that have been assigned. Ye. K. Ligachev was quite right when he pointed out that we do not have enough of this ability and that it is vitally necessary for each social scientist instructor himself to master the dialectical method and the ability to apply it.

Formalism and its result -- a pretense that all is well -- are multifaceted and tenacious. Look, it's as if everything is in order with progress in the social sciences: 90 percent of the ratings are excellent or good; "Satisfactory" is almost an event. However, the real examiner -- life -- assigns quite different ratings in many cases, ruthlessly revealing the wordy nature of convictions and their placement -- in Pisarev's words -- on the tip of the tongue. Our graduates often do not know how to defend their views in debates and political discussions and reveal the discrepancy between their knowledge of theory and actual conduct and a narrow approach toward vital values. Of course, the entire collective of the higher school and social scientists in particular are responsible for these world-outlook and moral costs.

Or take, for example, the unjustified speeding up of the growth in the number of participants in the All Union Contest for Student Works in the Social Sciences. Here too, the inclusion is close to 90 percent at a time when the number of scientific student circles attached to the departments, in which the future specialists can conduct genuine research, is sharply diminishing. The Komsomol Central Committee and the USSR Ministry of Higher and Secondary Specialized Education are responsible for this.

We are talking about students from the position of the instructors. However, how important feedback is and how important it is to know what the student thinks about instruction in the social sciences! Here are several results of a study of this question that the USSR Academy of Sciences Sociological Research Institute conducted in non-humanities VUZ for this meeting. Almost half of the students questioned pointed out that the lectures and seminar classes, which they attended, did not contain any significantly new material for them. Only a quarter of those, who answered the questionnaire, regularly attend seminars. When preparing for them, less than 40 percent of the students use the works of classic Marxist-Leninist writers, and only seven percent -- additional literature. There is something to think about here!

A substantial renewal of the content of training programs and of the entire instructional methods arsenal of higher education is now at the center of our work. This work is being performed based on the ideological and theoretical directions of the 27th party congress and the CPSU Central Committee decree entitled "On the Magazine KOMMUNIST." We are submitting its first and still modest results -- a series of training programs for the social disciplines -- for discussion by sections of the present conference. After that, they will be finished considering the comments and recommendations expressed.

The question of how to insure a new and higher level of completeness in studying Marxist-Leninist theory and the mutually penetrating unity of its component parts -- the historical experiences of the Communist Party and its revolutionary practices today -- also disturbs us. The question does not boil down only to the elimination of duplication and, moreover, one cannot understand it in a simplified fashion as the merging of all social disciplines into one subject and all VUZ social science departments into one large department. We are talking about the organic and truly dialectical unity of all social sciences on which the practical activity of our theory depends to a decisive degree.

The organizational aspect of the interaction of social science departments plays no less an important role in this task. In many VUZ, they are included in various departments, their instructors are on the lists of various party organizations and they do not associate with each other sufficiently. This is bad. In trying to correct the situation, several VUZ have established dean's offices or departments for social sciences. This question must be considered. It seems to us that social science instructors must be members of a single collective and a single party organization. Without this, it is very difficult to overcome their isolation and the lack of coordination in their training, methodological and indoctrinational work.

The introduction of a state examination on Marxism-Leninism, which will insure a more comprehensive ideological, theoretical, social and political certification of graduating students than at present, will be of use in the integral mastery of revolutionary studies. The most serious task of the USSR Ministry of Higher and Secondary Specialized Education is to create a new generation of social science textbooks that are responsive to the latest word in the party's revolutionary thought and to modern instructional methods requirements.

The improving of teaching methods is a very important task. First of all, it is necessary to overcome the purely informative approach to teaching and to direct efforts toward developing in students an ability to analyze processes and events in social life, using a Marxist-Leninist methodology. In order to do this, it is necessary to pay special attention to the practical side of teaching and to review the correlation between lectures and seminars in favor of the latter, and to do this very decisively -- about 1.5-fold. The breaking up of groups into smaller units will permit each student to speak during all seminar classes. This, of course, will complicate the work of instructors, but it will provide a great effect in forming the convictions and world outlook of the future specialist.

Under these circumstances, the role of lectures will not decrease but grow. A lecture must interest the student, inspire him to energetic independent work and help to orient him toward the latest scientific information. The main thing is for the instructor to be able to demonstrate during a lecture the application of the methodological principles of revolutionary theory to the analysis of the pressing problems in social development. It is here that a student has an opportunity to observe the movement of the instructor's thought and the logic of its development. The personality of the lecturer and his spiritual wealth and erudition exert a direct and strong influence on the minds and hearts of the youth.

A lecture is a peculiar type of art where one individual is simultaneously the author of the text, the director and the performer. Being a true sovereign of the thoughts of one's pupils is not an easy task. However, this is the good fortune of a teacher, and it is necessary to fight for this good fortune!

Discussions of burning problems must come to replace passive school forms of seminar classes and the notorious question and answer method. The lesson of truth, which the 27th party congress gave us, requires that students be able to obtain correct answers to the questions which arise in their minds every day during classes on the social sciences. Let students find answers to every "why?" caused by instances of corruption, poor quality of domestic items, scarcity, profiteering, housing shortages, and other difficult questions, with the help of instructors during discussions and debates, overcoming doubts and narrow notions.

It is necessary to insure the absolute priority of the student's independent work and to allot time for it -- this is still not enough. It is necessary to assign students a task which must be interesting, correspond to their capabilities and be feasible. It is necessary to monitor its fulfillment and to monitor it on its merits, displaying interest in the results and helping to select the avenue of research so that the monitoring will be useful to the student that is developing it. This work must be included in the teaching load and schedule of the instructor and be obligatory for the student.

Everything is not satisfactory with us in working with primary sources. First, the amount of mandatory literature is too great. It is so great that

it leads to a superficial approach. The amount of literature has been somewhat reduced in draft programs, but it is probably necessary to continue this work, single out a circle of basic works and insure their integral study, using seminars on primary sources. Second, it is incorrect to regard the making of abstracts as the only possible way to study the classic works, and the abstract -- as its result. You see, an abstract is a method and not the purpose of studying. Unfortunately, it often turns out that the strict requirement of an instructor to show an abstract leads to the student thoughtlessly rewriting somebody else's abstract or simply borrowing it from others.

The stress should be shifted to the system of active methods and to developing in students an interest in theory and the need to "talk things over" with K. Marx and V. I. Lenin and to study party documents thoroughly. The student's participation in a theoretical conference on the problems of Marxist-Leninist social knowledge, in which instructors not only from the social sciences but also from the natural, humanities and technical sciences would participate along with the students, could become one of the important forms for the student's mastery of the classical legacy.

Generally speaking, an important reserve for improving the quality of social science teaching is the strengthening of its bonds with special courses. Fruitful experience in this regard has been accumulated in Moscow University, the Moscow Higher Technical School imeni N. E. Bauman, the Moscow Institute for Steel and Alloys, the Dnepropetrovsk Metallurgical Institute, the Kharkov and Riga polytechnic institutes, the First Moscow and Donetsk Medical institutes, and many others. The organization of special courses on philosophy matters in the specialties of the senior classmen deserves serious attention and dissemination.

In order to raise the level of teaching, it is necessary to experiment more boldly, giving greater independence to departments in the conducting of teaching and indoctrinational work. Unnecessary guardianship and regulation of their activity bind initiative and leads to the taste for improving teaching methods to be lost in some departments. A system for informing instructors about the state of affairs in a given region and about problems, with which local organizations are busy, has still not been gotten right. We are now establishing higher school regional centers which, it is thought, will help to solve this question more effectively.

Higher schools are performing a great deal of work to prepare specialists for foreign countries. More than 90,000 foreign students from 149 states are now studying here. The task of social scientists is to arm these students with the ability to analyze social phenomena and processes and to link the study of theory with the problems in the countries and regions from which the students have arrived. You see, they came to us to learn not only a profession but also a way of life. We do them a poor service and we damage the interest of our state when we approach their education and especially the evaluation of the quality of their knowledge with lowered exactingness. Unfortunately, this is taking place in a number of cases.

One other observation. Let our students, who have been accustomed since childhood to a free education and medical care and a guarantee of work, pensions and the other benefits of socialism, rub shoulders with living witnesses from another world -- witnesses who have found out from their own fate and from the fate of their near ones what unemployment, poverty and hunger are and how difficult the path of the struggle for social justice is.

Expand Research On the Pressing Problems in the Practices of Socialist Construction.

A thorough restructuring has also been begun in the area of the social science department's scientific activity. The 27th party congress, which required that the fundamental tasks in accelerating our society's progress be placed at the center of research, that the effective response of the social sciences to the requirements of life be assured, and that sound forecasts and constructive recommendations for practices be developed, determined its essence. These fundamentally new demands on our work in the area of the social sciences have forced us to make a deep analysis of what has been done and to develop an effective program for the future. The problems of research as well as the scope of the tasks being solved and the importance of the results being obtained are not responsive to the party's policy for the development of new approaches in political, economic, cultural and indoctrinational activity.

We have resigned ourselves too long to the alienation of much research from the needs of life and to the substitution of genuine research into a theoretical understanding of practices by schemes and wars of words over definitions and concepts. The scientific work of a considerable number of departments suffers from barrenness. At times, instructors shift the work on one and the same problem from year to year and from plan to plan, without taking a step forward. Sometimes, this serves as a nutrient medium for transforming such instructors into backward and essentially illiterate handicraftsmen.

During the discussion of the CPSU Central Committee draft on restructuring higher schools, we received many letters from VUZ workers. For example, there was the letter from a group of party history instructors. Its main thesis was why should a party historian be engaged in science; he is so loaded by the training process that he has no time for science. Let the Institute for Marxism-Leninism and the Academy of Social Sciences conduct research. Comrades, no, no, and no. Participation in scientific research work is the main factor in the professional growth of instructors and a guarantee of that growth.

Dogmatism perhaps inflicts the greatest harm on the development of scientific research; in particular, a number of works in the field of socialism's political economics separate the analysis of production relationships from the actual concrete historical conditions for their development, from the vital dialectics of production forces and from the present-day scientific and technical revolution. The scientific works of several authors have confirmed the speculative and hardened image of the immutable essence of socialist production relationships and contain a simplified treatment of the problems in their conformity to the developmental level of production forces. This has led to



the illusion of an automatic reproduction of socialism's advantages and to the disparagement of the role of purposeful and scientifically sound organizational work.

As is known, scientific discussions, which are conducted on the basis of true democracy, competency and a creative approach, are the best medicine for dogmatism. We must master the ability to organize such discussions of the problems maturing in the development of theory and insure an increase in Marxist-Leninist knowledge.

There is another item. We have conducted a number of all-union scientific conferences. We are proud of the fact that the recommendations of one of them -- on the problems in the development of the agroindustrial complex-- have found practical application. An urgent task is arising -- to develop an effective mechanism for incorporating scientifically sound recommendations and research results into public practices.

The participation of social scientists in solving concrete social, economic, ideological, and indoctrinational tasks has recently grown somewhat. They are being enlisted as developers of social development plans. The inauguration of the "Applied Sociology" specialty on the basis of a philosophical and economic education has provided a new impetus to the expansion of sociological research and will contribute to the strengthening of the sociological services in enterprises and to the realization of tasks involved in the social orientation of personnel.

The social science departments in a number of VUZ connect practical work with the formulation of scientific problems. For example, the Ufa Aviation Institute is performing research questions concerned with stabilizing work collectives in the areas of new industrial development, and the Sverdlovsk Institute for the National Economy -- on problems involved in improving the way of life and work and rest conditions of women in heavy industry enterprises. With the help of a sociological laboratory, Simferopol University's Scientific Communism Department has developed and introduced a system for the effective use of production's social reserves into the majority of enterprises in its city.

However, these are only the first swallows which do not make a summer. The potential of the social sciences is still being used poorly in a whole series of VUZ.

The work style of VUZ management bodies in directing research in social science departments also requires considerable improvement. Here, control is often formalized and limited to counting articles and monographs published; this is done without analyzing their depth and importance. A restructuring of the activity of social science sections in the Scientific-Technical Council and problem-solving commissions is demanded, and the organizing role of the Main Administration for Teaching Social Sciences in the USSR Ministry of Higher and Secondary Specialized Education must be raised. It is necessary to arrange for and carry out effective coordination of the work of higher schools and the social science institutes of the USSR Academy of Sciences

and the academies of science of the union republics, the Institute of Marxism-Leninism and the Academy of Social Sciences attached to the party's Central Committee. It is necessary to expand the amount of research done according to orders from the central economic departments and party and Soviet bodies as well as that done on the basis of economic agreements with the enterprises and organizations of the branch ministries.

An important question is the establishment of new scientific institutions. Most likely, the fact that only two of the 62 scientific research institutes operating in higher schools and only eight of the 1,760 problem-solving and branch scientific research laboratories are concerned with the social sciences, cannot be recognized as normal.

When carrying out the restructuring, we must significantly increase exactingness on the ideological and theoretical level, scientific innovation and practical importance of social science publications, put out a dependable covering detachment against second-rate printed products and link the results of important research with their publication more organically.

The question of raising the status of higher school social science journals and of converting them into scientific and theoretical publications with a broad profile, is being solved. This is increasing their role and responsibility as organizers of works in the area of Marxist-Leninist theory and in the task of summarizing and disseminating progressive experience acquired in the teaching of the social sciences and in communist indoctrination.

#### Improving the Communist Indoctrination System of Students

The restructuring demands a considerable improvement in the ideological, political, work, moral, and aesthetic indoctrination of students. This is the task of all professor and instructor collectives and all party, Komsomol and trade union organizations. However, social science departments have been called upon to play a responsible and even more active role in this multifaceted work.

The present student body is the most educated generation -- if one takes it as a whole and from an historical comparison -- in its mass displays of political activity, awareness, work enthusiasm, and scientific and technical creativity. At the same time, we cannot fail to note the passivity of a significant portion of the youth, the absence of genuine interest in a trade, political infantilism, consumerism, narrow dispositions, and a blind imitation of the attributes of the petty bourgeois way of life. All of this is against a background of numerous indoctrinational measures.

The negative phenomena can only be overcome by expanding the activity of the youth themselves. The main thing is to decisively increase the student's responsibility for the quality of school work by carrying out the Leninist precept that study in a VUZ is not the personal whim of an individual but a combination of his desires and his dreams about an education with state requirements and that it is necessary to treat students as persons who have been taken into state service.

The USSR Ministry of Higher and Secondary Specialized Education has repealed the conditional transfer of students. Now, those students, who have unsatisfactory grades at the beginning of the next school year, will be dismissed from the institute. This is aimed at creating a fundamentally new atmosphere of strict exactingness which is the most effective condition for an education.

The crisis nature of our times, the opposition of the two world systems, the declaration of a "holy crusade" against socialism by the aggressive imperialist circles of the United States, their striving to dispatch Marxism-Leninism to the "ashes of history" -- all of these move the need for a thorough strengthening of the student's ideological education and for an increase in their political vigilance to the forefront.

A thorough knowledge of the motherland's historic past and of the process in the revolutionary formation of the great Soviet people -- a new social and international community of people -- is a powerful means for forming high political and moral standards in our secondary school pupils. During recent years, the Soviet people's feeling of national pride in their country, its past, its revolutionary traditions, and the wealth of our spiritual culture has intensified. Many examples of students unselfishly participating in the restoration and protection of historic monuments are known. It is necessary to support these undertakings in every way possible and, when doing this, to resolutely struggle against the nationalistic attitudes, attempts to idealize the past and the passion for bourgeois mass cultural standards, which still permeate the student body.

The celebration of the 40th anniversary of the victory over fascist Germany provided a new impetus to the development of different forms for military and patriotic indoctrination. This work has been well organized in the Belorussian Polytechnic Institute which was the winner in the All-Union March to Places of Revolutionary, Combat and Work Glory.

The student detachments have become a recognized school for work training and moral maturity. Annually, they assimilate more than 1.5 billion rubles in the national economy. The detachments must be more widely used as a prospective form of professional education. Social and political work in the detachments is in need of improvement, and it is necessary to increase the student's participation in conducting propaganda among the population. The social science departments must arm them with the methods of this work.

In speaking about the formation of the students' world outlook and moral standards, I would especially like to point out the importance of an atheistic education. The definite revival of religious vestiges among part of the students cannot fail to evoke anxiety in us. It is a matter of honor for social scientists to oppose this phenomenon with the ideological might of the philosophy of militant materialism and to wage a daily struggle to strengthen the norms and principles of socialist humanism and increase attention toward the individual.

The practices used by the Dagestan University in the atheistic indoctrination of students deserve approval: A scientific atheism department has been

opened, and the Mysl philosophy club and a scientific circle devoted to the problems of atheism are in operation. Beginning in 1983, the social professions faculty has prepared approximately 200 lecturers on atheism.

Of course, it is necessary to repulse the various clerical forms of anti-communism in a timely and well-reasoned manner. Social science department instructors have been called upon to unmask the ideological subversive activity of imperialist propaganda from foreign reactionary centers that have especially intensified their activity in connection with the approaching 1,000th anniversary of the introduction of Christianity into Rus.

The party has posed with special urgency the question of the priority development of the social sphere in society's life. In the final analysis, this is a question that concerns the necessary conditions for the thorough development of a Soviet individual's personality and his spiritual standards. Humanitarianization is one of the necessary avenues for the further progress of present-day higher education. The essence of humanitarianization consists of forming high moral and aesthetic standards in young specialists. The state of affairs in this regard is still not favorable. We are talking not only about the generally low standards of many students, which alarms us, but also about elementary illiteracy, the poor mastery of a native language and the lack of development and banality in the aesthetic tastes of a certain portion of the youth. The formation of the specialist as a genuine socialist-type intellectual is an important task of higher schools.

Under modern conditions, attention to the moral aspect of student needs their raising and the development of a person's spiritual needs, is acquiring key importance. You see, there is no kind of economics that will restrain the unchecked growth of an individual's material needs if they are not limited by his inner standards, culture and self-control.

The experiences in the humanitarian training of specialists, which has been accumulated in Rostov University during the past 20 years, is extremely interesting to us. Students in all specialties optionally study for eight semesters a series of disciplines with a humanitarian and general cultural profile in the cultural theory department. The series of disciplines studied include courses on history, cultural theory, different types of art, aesthetics, ethics, psychology, logic, and oratory.

The need for a serious improvement in the system of public and political practices has ripened. The social professions departments need a significant improvement in their material base and scientific, methodological and organizational help. The question of raising the authority of the dean's offices in these departments has come to a head. It seems advisable to us to establish the same teaching load for them as that for the dean's offices in the educational departments; it is necessary to think about paying for their work.

Finally, there is another large problem -- the rational use of the students' free time in order to thoroughly develop their personalities and strengthen the norms and traditions of a healthy, cultural and sober way of life. This task grew to full height in connection with the implementation of the CPSU

Central Committee's decrees on overcoming drunkenness and alcoholism and on improving cultural, mass and sports work. The Collegium of the USSR Ministry of Higher and Secondary Specialized Education has reviewed this question using the example of the VUZ in the city of Gorkiy. The large reserves, which exist there for expanding cultural, mass and sports work, are not being sufficiently used. It is necessary to change the attitude toward culture and its material base and skilfully combine the efforts of the administration, the student community, the Komsomol and the trade union. Cases of a liberal -- essentially, they shut their eyes -- attitude in the VUZ to all still existing instances of using alcoholic drinks were given a sharply critical evaluation in the Collegium.

It is impossible to solve the fundamental questions involved in a modern approach to the training and indoctrination of students without intensifying in every way possible the activity of the VUZ Komsomol and without developing a system for student self-government in which the Komsomol is called upon to play the role of the main motivating force. In order to make fuller use of the educational resources in the student collective, it is necessary to expand considerably the range of questions which must be resolved with its active participation. It is necessary to provide an opportunity to the students to influence the training and indoctrinational process. This includes the differentiated assignment of stipends, questions concerning the dismissal and restoration of students and the distribution of the graduating class. It is advisable to transfer to the jurisdiction of student collectives the organization of socially useful labor, daily life and rest; the use of free time; and the maintenance of cleanliness and order in community housing, dining halls, training premises, and libraries.

In this connection, it seems to us that the institute for student group curators has become outdated and become an obstacle on the path to developing the future specialists' independence and self-government. You see, matters have come to the point where the institute's party committee listens to a curator's report on the poor progress of a student group!!

It is necessary to pay special attention to the students' communal housing. Communal housing must truly be a school for a socialist way of life! In order to do this, it is necessary to reorganize and change a great deal and to overcome the "perpetual holiday" atmosphere. There, the work principle is being observed poorly. Here, of course, it is up to the initiative of the Komsomol and the trade unions, but social science instructors can provide considerable help -- to be sure, not by visiting the communal housing with an on-duty arm band on one's sleeve. This only belittles the instructor and the students. It is necessary to repudiate this decisively. We have examples of a creative attitude towards this important task.

For example, the scientific communism department in the Azerbaijan Engineer Construction Institute heads the Dzhanghi experimental sport and artistic association with the support of the party committee and public organizations. They have combined the efforts and resources of state and public organizations and amateur clubs and are using elements of cost accounting. The association's first steps have led to a substantial improvement in the organization

of the students' spare time -- in particular, they are actively participating in the All-Union Festival of National Creativity which is devoted to the 70th anniversary of Great October.

It is necessary to help the VUZ Komsomol to fully master the skills of self-government and the ability to use democratic norms, not to be afraid to display initiative and to eliminate formalism. Social science department instructors have always been the main advisors, senior comrades and commissars in the students' political indoctrination and in the transfer of their own life experiences and convictions to them. This is now as necessary as never before!

#### Cadre -- the Key Link in Solving the Restructuring Tasks

The restructuring and the increase in the quality of the work of social science departments depends on the composition of cadre to a decisive degree. The qualitative structure of social scientists improved somewhat during the last five-year plan. The percentage of instructors with scientific degrees and titles grew by more than five percent -- 63 percent of them now have them overall. Whereas the total number of VUZ social scientists increased by 10 percent during these years, the number of candidates of science grew by more than 21 percent and that of doctors -- by 16 percent.

This growth, however, cannot be overrated. More than a third of the social scientists do not have scientific degrees and titles. Only every third department is headed by a professor. As before, the unevenness in the distribution of professors in the country's regions is great; they practically do not exist in many departments in the VUZ of Central Asia and Kazakhstan. It is still possible to encounter departments whose managers do not have scientific degrees and titles -- for example -- in the Belorussian Theatrical and Artistic Institute and the Tajik Art Institute, i.e., just there where especially high demands are being placed on the level of ideological work.

Many years of practice convince us that only instructors with a basic -- special university education -- correspond to modern requirements. This is an important principle that determines to a great deal our policy in staffing social science departments -- and it is being violated in many educational institutions. Thus, almost half of the social science instructors, who do not have scientific degrees and titles, have not received such education in Uzbekistan's VUZ. Serious criticism should be directed toward the VUZ in Kirgizia and Kazakhstan where this percentage varies from 35 to 46 percent. The picture in the VUZ of the USSR Ministry of the Fishing Industry (more than 84 percent) and the Central Union of Consumer's Cooperatives (64 percent) is even more unfavorable.

The problem of the correct combination of experienced and young cadres and of the continuity of generations in social science departments requires a radical solution. Here is significant data: There are only eight doctors of science younger than 40 in all of the higher schools (80 percent of the country's social scientists work here!) -- five party historians and three philosophers. This does not at all mean that we do not have worthy young

scientists; we have simply not been able to insure the conditions for their creative growth.

How can the Georgian SSR calmly regard the fact that persons older than 65 form 28 percent of the total staff in the republic's social science departments? An unfavorable situation has also taken shape in the VUZ of Turkmenia, Armenia and also the USSR Ministry of Culture where the number of social scientists older than 60 is significantly larger than the country average. A well-thought-out system of measures is required here.

The youth, who are coming to replace us, require very intense attention. It is youth who carry a magnificent fund of the social dynamism that is necessary for implementing the reforms that are about to happen. We must search more actively for talented youth.

The party layer and percentage of youth which have production service have grown somewhat with the introduction of a mandatory party body recommendation into the rules for acceptance into the social science specialties. However, I would like party organizations to join more actively in the search for gifted children. It is necessary for union republic ministries of higher and secondary specialized education and universities to attract politically mature and capable youth to the social science specialties on a wider basis. It is necessary to establish effective contacts with party and Komsomol raykoms and military unit and large unit political sections, and to conduct vocational orientation work more energetically with the Komsomol aktiv of secondary schools.

Finding a school-leaver is one aspect of the task; the other aspect is connected with establishing the necessary conditions for forming a creative personality in a specialist inside the walls of educational institutions. This aspect touches all phases of the training and indoctrination process -- its content, forms, methods, and systems.

In carrying out the CPSU Central Committee decree on improving the system for raising the qualification of social science cadres, we have already achieved positive changes in the activity of the institutes devoted to raising the qualifications of social science instructors. In the institutes for increasing the qualifications of social science instructors, the role of active training forms has been increased, psychological and pedagogical training has been improved somewhat and the public and political work practices of the students have been expanded. However, the institutes for raising qualifications have still not become to the necessary degree training and instructional methods centers for generalizing progressive experience and mastering the theoretical successes achieved in Marxist-Leninist theory. It is in the institutes for raising qualifications that it is first of all necessary to systematically renew the content and forms for teaching social sciences.

The restructuring must increase the role of the department as a very important link in the training and indoctrination process and as its organizational center. The success of the work will depend to a decisive degree on the level of the creative activity and dedication to the cause of each member in the



department collective, his competency, a well-wishing and highly moral atmosphere alien to squabbles and collisions of narrow ambitions, and a comradely and highly principled style of mutual relations. It is natural that the manager of the department has been called upon to be the initiator and spirit in this task. His high professionalism, erudition, moral authority, energy, and ability to rally the collective are the determining conditions for the future solution of the tasks being faced by departments.

Sharp criticism addressed to the USSR Ministry of Higher and Secondary Specialized Education regarding long-drawn-out paper proceedings and bureaucratic passing-the-buck was heard in Ye. K. Ligachev's speech. I also applauded this thesis because this is actually our great misfortune and, unfortunately, not only for the Ministry of Higher and Secondary Specialized Education but also for all higher schools. A wave of paper has swept over the VUZ. Department managers are constantly writing reports, references, plans for measures, information reports, and requirements. A habit of paper activity and paper generation has been formed. Several employees already think that this is genuine work. Moreover, one employee creates a work subject for another in this manner. When starting the restructuring, we abolished the training and instructional methods complexes and the reports on them. This decision evoked hearty approval from higher school instructors. We have now forbidden the contact of employees "through paper" within the ministry. An order was issued at the end of September which expanded the rights of VUZ in organizing the training process.

All of these, however, are the very first steps. The struggle against bureaucratism will be difficult. The leadership of the ministry and its party committee are seriously thinking about this problem and are trying to reveal reasons for the luxurious blooming of the bureaucracy in higher schools. One of the main reasons is the incompetency of a director. Not knowing how to perform his job, the director takes refuge in reports and requires a report from his subordinates. When a signature is affixed to a paper, it is not so simple to divorce oneself from it! Another reason is incorrectly organized control. They do not inspect the substance of the task but the papers that accompany that task -- not the quality of the lectures but the plan for inspecting the quality of the lectures, the work plans of the departments and the availability of annual reports, protocols, duty schedules, vacations, and logs of visits. Those, who do the inspecting, have learned: on paper -- with a paper!

Here are cases from practices. A new rector arrived in a VUZ. He began to get acquainted with the departments. He asked one of the department heads a question -- the latter gave him a document. The rector said: "How are you doing with respect to the increase in pedagogical personnel?" -- the latter gave him a piece of paper again from another case. "How are you doing...."-- again, a piece of paper ....

We are putting out an unnecessarily large number of orders and decrees. Look: In 1985, the Ministry of Higher and Secondary Specialized Education received 1,323 decrees and directives during the year and itself launched "downward" 994 orders. Such an abundance of instructions leads to difficulties both in execution and in control.

Formalism in summing up the results of socialist competition inflicts very serious damage on the quality of VUZ work. We in higher schools have dried it up as much as we can! We have not taken care of the substance of the task, but we are counting the points. It turns out that the student body goes to the movies three times -- it is possible to skip two lectures (an equal number of points is added and subtracted). An instructor performs duty in the DMD [Voluntary People's Detachment] -- this replaces the publication of an article for him in the accounting of the department's competition results.

It is impossible to drive the lively, complicated and multifaceted work of VUZ into strict limits. In order to overcome bureaucratism in this area, it is necessary to raise the role of openness and public opinion, which are capable of estimating correctly and at their true worth our achievements and our blunders based on socialist principles, must be increased more.

Majestic and noble tasks of enormous party and public importance have been assigned to us. The restructuring is not a single measure and not a temporary campaign. It is a process -- a complicated process which will take place within the framework of a complete historic period. The main landmarks of the restructuring have been determined. It has begun. No one and nothing can stop it. Finding one's place in this life-giving process and devoting all the strength of one's heart and mind to it-- this is the duty of each one of us, of each communist and of each citizen.

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GOSAGROPROM OFFICIAL REPORTS IMPROVED SPECIALIZED TRAINING

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[Article by Yu. Vsevolozhskiy, chief of the Administration for Higher and Secondary Specialized Education of USSR Gosagroprom: "Intensive Production - Complete Development of Personnel]

[Text] A pivotal point in the creative changes carried out by the Communist Party of the Soviet Union, in the interest of accelerating the socio-economic development of society, is the conversion of the national economy over to the use of mainly intensive factors for economic development, which in terms of its importance and effect on all aspects of the country's life, must be ranked, as emphasized by M.S. Gorbachev, "at the same level as such profound changes as socialist industrialization."

Such an accelerated conversion over to the intensive type of production assumes first of all the practical use on an extensive scale of the achievements of the scientific-technical revolution, in continuous association with the advantages offered by the socialist system of management. In the process, the mutually conditioned development of science and engineering and the efficient use "...of equipment representing the latest word in modern science..." (V.I. Lenin, Complete Works, Vol. 36, p 300) provides the basis for a steady decline in the proportion of manual low-skill labor and for raising its productivity and production efficiency. This is an indispensable condition for achieving further growth in the well-being of the Soviet people. In Article 21 of the USSR Constitution, it is stated: "The state is concerned with improving labor conditions and safety, the scientific organization of labor and reducing and in the future completely eliminating heavy physical labor based upon the complete mechanization and automation of production processes in all branches of the national economy."

These requirements apply fully to the development of the agro-industrial complex, which is solving the complicated tasks embodied in the USSR Food Program.

The agro-industrial complex occupies a leading position in the country's economy. There are 40.8 million workers engaged in branches of the agroprom and no less than 30 percent of the country's fixed productive capital is concentrated in it. It accounts for approximately one third of the gross

social product. The principal inputs for scientific-technical progress in the agro-industrial complex include first of all: the progressive development of equipment for the complete mechanization, automation and chemicalization of industrial processes; the extensive use of intensive, industrial and flow-line technologies for the production of goods, which will ensure a stable increase in the productivity of live and materialized labor.

The task of satisfying completely the population's requirements for food products and industry for raw materials is being solved against a background of a progressive redistribution of manpower between agriculture and the developing branches of industry, transport, communications and others.

Thus a most important means for carrying out the Food Program of the USSR and achieving growth in the production of goods, while simultaneously reducing the number of workers in agriculture, is the complete mechanization and automation of technological processes.

As is known, the principal feature of the agrarian sector, distinct from industry, lies in the use of biological objects (animals, plants) for producing goods, a typical sign of which is a continuous flow of technological processes on the one hand and, on the other, the recurrence of cycles in the matter of obtaining products. Here the machine technology is inseparably intertwined with biological processes and this makes the production processes in agriculture dependent upon specific production conditions that are extremely complicated and diverse.

An equally important feature of agriculture is also its considerable dispersal over an area, the seasonal nature of the use of means of production, their brief operation during a 24 hour period and so forth.

It bears mentioning also that a large amount of agricultural products is obtained outdoors, that is, under changing and frequently unfavorable conditions involving considerable fluctuations in temperature, humidity, dusty air and so forth. This in turn leads to an increase in the diversity of technological processes, it brings about differences in the types, designs, characteristics and operating regimes of the agricultural equipment and it inhibits the use of automatic and remote control equipment. The system of machines for agriculture now numbers up to 4,000 types, one third of which are intended for use in animal husbandry.

The use of new intensive varieties and hybrids of agricultural crops represents a powerful means for raising the level of effectiveness of agricultural management. For example, such strong varieties of winter wheat as Kolos, Zarka, Krasnodarskaya 57, Donetskaya 5, Donskaya Bezostaya and others are furnishing up to 60 quintals of grain per hectare. New corn hybrids are making it possible to obtain seed yields which exceed by a factor of 2-2.5 those obtained from such earlier regionalized hybrids as Bukovinskiy and Dneprovskiy.

Highly effective varieties and hybrids of forage crops which are distinguished by yields of 80-100 quintals of dry substance per hectare have been developed and introduced into agricultural production. Important problems are being

solved by the creation and use of new varieties and hybrids in potato, vegetable and fruit production. Meristemetic culture methods are being employed extensively here in order to obtain highly productive non-virus planting stock.

In recent years, the use of intensive technologies in agriculture has produced a substantial increase in the output of products and in production efficiency. In addition to ensuring high economic effectiveness, it is also stimulating the development and extensive use in kolkhoz-sovkhoz practice of new machines and mechanisms, implements and production lines and new equipment for automating production operations.

The principal trends in scientific-technical progress in farming and animal husbandry, which are making it possible to reduce operational expenses and direct expenditures and which ensure increased efficiency, are bringing about the creation and extensive use of new systems of machines, new means of automation and equipment.

As is known, a considerable increase in efficiency is also being achieved through the use of complex fertilizers, chemical means for combating agricultural pests and diseases, new veterinary preparations and so forth.

At the same time, scientific-technical progress is exerting a substantial variable and transformational effect on all branches of agro-industrial production, especially on agriculture, in which natural conditions and land as the principal means of production exist and develop in a parallel manner on the one hand and, on the other, technical, chemical and other means and also methods and technologies for their use and forms for organizing labor and controlling production.

As agricultural production continues to develop, the signs of unique industrial production, which is distinguished only by the continuous nature of output production, become more inherent.

The natural conditions of agricultural production are replaced by a natural environment which bears the imprint of human activity. The natural conditions themselves and the prerequisites for agricultural production appear in a distinctive "continuously cultivated" form: their different aspects develop under the direct and intensive influence by man.

In describing this process, the Czechoslovak journal POLITICHESKAYA EKONOMIYA (No 4 for 1984) noted that whereas 30 years ago up to 60 percent of the factors for growth in agricultural production in the republic were beyond the control of man, under modern conditions the proportion of such factors has decreased substantially and does not exceed 25 percent.

Thus, under present conditions with respect to the development of scientific-technical progress, growth in agricultural production and fulfillment of the tasks set forth in the USSR Food Program are dependent to a decisive degree upon the human factor, the role and importance of which was emphasized in particular in the Political Report by the CPSU Central Committee to the 27th Party Congress and in other speeches by M.S. Gorbachev. All of this imposes

new and immeasurably higher requirements upon the level of personnel training, instilling in them a readiness and desire to make practical use of scientific and engineering achievements and upon the level of their organizational ability and responsibility.

Thus, one important condition having an effect in the final analysis on the rates for scientific-technical progress and accelerated economic development for such a vitally important branch as agriculture is the leading level of professional training and social activity of personnel.

In describing this aspect of scientific-technical progress in the work entitled "Principles of Communism," F. Engels emphasized: "...in order to raise industrial and agricultural production to a higher level, it is not enough to merely have mechanical and chemical auxiliary means available. The talents of the personnel responsible for placing these means in operation must also be developed. Just as during the last century peasants and workers attached to textile mills, after being drawn into large-scale production, changed the entire tenor of their lives and became completely different people, so also today the carrying out of production operations and the resulting new development of such operations require the creation of completely new people" (K. Marx, F. Engels, Works, 2d Edition, Vol. 4, p 335).

The higher school of the USSR Gosagroprom [state agro-industrial committee] system, in forming decisive personnel prerequisites for combining the achievements of the scientific-technical revolution with the advantages of the socialist system and possessing considerable scientific potential, bears increased responsibility for the rates of scientific-technical progress in branches of the APK.

Thus an acceleration in scientific-technical progress is unthinkable in the absence of the introduction of progressive changes at the personnel training level, which must fully conform to each given stage in the development of scientific-technical progress, since the work of specialists engaged in agro-industrial production must become more systematic in nature and require the development of fundamental education, the extensive use of modern forms and methods for processing information and substantial strengthening of the role played by practice and the methodological component both in training and in raising the skills of personnel at all levels.

In order to alter sharply the trend in the training of specialists of the new type, individuals who are capable, by performing in a more intense and creative manner, of continuously searching for and finding uncommon approaches for solving important key problems concerned with the accelerated development of production, the work of the higher school must be reorganized in a radical manner.

In August 1986, the Politburo of the CPSU Central Committee reviewed the results of the national discussion of the project entitled "Basic Directions for Reorganizing Higher and Secondary Specialized Education in the Country." It was noted that this document was generally approved and supported in all areas as a program for basically improving the system for the training and

retraining of specialists, the implementation of which will actively promote an acceleration in the socio-economic development of Soviet society.

The need has already been emphasized this academic year for launching a program of work aimed at improving the work of higher and secondary specialized educational institutes and achieving a new level, from the standpoint of quality, in its development in conformity with the decisions handed down during the 27th CPSU Congress.

During the course of discussing the project, more than 200,000 statements and proposals were made aimed at raising the level of specialist training substantially and radically improving their use in the national economy.

Thus an indispensable part of the creative changes taking place in our country is that of implementing improvements in the higher agricultural school, the operational level of which affects the professional training and ideological convictions of the future specialists -- leaders and organizers of the agro-industrial complex -- and in the final analysis, raising the efficiency and stability of agricultural production.

Today, at 106 agricultural VUZ's of USSR Gosagroprom and 17 of their branches, more than 40,000 professors and teachers are providing instruction in 38 specialties to approximately 600,000 students.

In addition to the principal faculties at the VUZ's, there are also in operation 97 training departments with an overall contingent of more than 11,000 individuals and 94 faculties for improving the skills of leading workers and APK specialists, at which up to 60,000 individuals from 140 scientific-research subunits are improving their skills annually.

There are 160 training-experimental farms and other cost accounting enterprises which are directly subordinate to the rectors of VUZ's. The uchkhozes [training farms] are developed agricultural enterprises and they have almost 1 million hectares of land at their disposal, of which amount 700,000 hectares are agricultural land, including 500,000 hectares of arable land. The farms of VUZ's have 250,000 head of cattle, approximately 200,000 swine and a considerable number of other types of animals and poultry. Training-experimental leskhozes [forestry farms] have 140,000 hectares of various types of forest land at their disposal.

Thus the VUZ's of the USSR Gosagroprom system have accumulated a powerful scientific-pedagogical, training-material and experimental-production potential which is making it possible for the most part to satisfy the agricultural requirements for specialists possessing higher educations. There are now more than 2 million specialists working directly in agriculture, including 1 million graduates of higher educational institutes.

The training of highly skilled personnel for kolkhozes, sovkhoses and other production enterprises of the APK underwent further development during the years of the 11th Five-Year Plan. The network of higher educational institutes and the acceptance of students were expanded and measures were carried out aimed at strengthening the logistical bases of VUZ's. The results



being achieved by the VUZ science were raised somewhat -- the scientists of VUZ's created and regionalized a number of intensive varieties and hybrids of agricultural crops, highly productive pedigree groups and lines of animals, vaccines and diagnostics and models of machines, equipment and instruments. More than 400,000 specialists, or almost 20 percent more than during the preceding five-year plan, were trained at VUZ's.

The scales achieved in training specialists with higher educations for agriculture are on the whole satisfying the personnel requirements of the agro-industrial complex from the standpoint of quantity.

At the same time, the extensive development of VUZ's, mainly through an expansion in the volumes of specialists produced in recent years, was not accompanied by the improvement required in the professional level of their training. The level of training and instruction for the specialists being produced is no longer satisfying the increasing requirements for accelerating the country's socio-economic development. It is mainly the economic and practical training of specialists that is lagging seriously behind the requirements for kolkhoz-sovkhoz production. The effectiveness of use of the scientific potential of VUZ's is low. The scales and quality of the work of the VUZ sector of science is not in keeping with the needs of agro-industrial production. Serious improvements are needed in the organization of fundamental and applied scientific studies and their integration with training-educational work and production.

The system for raising the skills of agricultural leaders and specialists has not become an effective lever for accelerating scientific-technical progress. It does not conform to the tasks for converting the agro-industrial complex over to a new economic, technical and technological base from the standpoint of quality, either on the basis of regularity of renewal of knowledge or according to the intensity of instruction.

Despite the fact that the most important condition affecting improvements in the work of the higher schools is the level of skills possessed by the teaching personnel, insufficient attention is being given to the staffing of the VUZ's with such personnel. Of more than 40,000 scientific-teaching workers at agricultural VUZ's, only approximately 1,500 of them (3.7 percent) are doctors of science or professors and approximately 18,000 (45 percent) are candidates of science or docents. The proportion of professor-teacher personnel possessing scientific degrees and titles had still not reached 50 percent of their overall number.

The material base of the VUZ's has fallen behind in its development and is not in keeping with the modern level of scientific-technical progress.

There are also many shortcomings in the utilization of VUZ graduates, the training plans for which by no means reflect the true requirements for them of the agro-industrial complex. Practically nobody bears serious responsibility for the requests being received from the various areas for specialists having higher educations.

A study of these matters has made it possible to uncover a number of factors which brought about a reduction in the quality of training for young specialists and for improving the skills of APK leaders and specialists.

One bottleneck in the training of VUZ graduates is the low level of their practical skills and the extended period for adaptation to production. In analyzing this process, it is important to note the substantial mistakes which occurred in the organization of educational work at VUZ's during the 1970's. In 1974, training plans were introduced which were aimed at strengthening the theoretical training of students at the expense of lowering the time for production practice.

In 1983, the present training plans were approved for the purpose of bringing specialist training into conformity with the increasing requirements of the developing production operations. In them, a certain reorientation towards an increase in practical instruction was achieved. However, even these training plans were far from perfection. In particular, in the general theoretical disciplines called for in the plans, the duplication of school programs, many shortcomings in the distribution of time and other shortcomings had still not been eliminated. At the present time, the collectives of VUZ's are introducing substantial changes into the training plans and programs as a result of the requirements handed down during the 27th CPSU Congress for accelerating the country's socio-economic development.

In view of the fact that training plans serve as the organizational-methodological base for radically improving specialist training, the new training plans were examined at leading kolkhozes and sovkhozes throughout the country, by the councils of higher educational institutes and scientific-research institutes and in subunits of USSR Gosagroprom.

During their preparation by leading VUZ scientists, consideration was given to the basic requirements for a special purpose approach in organizing the training-educational process and to orienting all specialist training towards the final result, that is, towards satisfying the requirements of the agro-industrial complex for specialists of the new type, individuals capable of solving complex tasks not only for today but also tomorrow.

A great amount of attention has been given to studying the specialized disciplines and practical training of future specialists. An annual practical-probationary period for students has been introduced for the fourth year of instruction. The number of hours allocated for studying individual general theoretical and general professional disciplines has been reduced somewhat. This was achieved mainly owing to the fact that the duplication of material lacking application value for the training of agricultural production specialists and not affecting the formation of their professional knowledge was eliminated.

The task of continuous study by students of general professional disciplines in all of the courses and optimization of their structural-logical association with special subjects has for the most part been solved in the new training plans.

An important aspect in improving the training of specialists is that of improving their economic education. Expanded economic training for students is called for in the new training plans and independent courses have been introduced on the economy of the agro-industrial complex and administration of agricultural production.

As is known, one of the principal means for intensifying the training process at VUZ's is the extensive use of computers, particularly microprocessor equipment, which appear not only as generally accepted means for automating computational work but also as a powerful factor for raising the overall intellectual level of future specialists. The task consists of ensuring that each student masters the use of computer equipment for the administration of agricultural enterprises, economic computations and the organization of technological production processes. In conformity with this, a study of computer equipment is called for in all new training plans.

In the work of raising the quality of specialist training, considerable importance is attached to ideological-educational work, an important aspect of which is the formation of a Marxist-Leninist world outlook in students and the ability to employ Marxist-Leninist theory in actual practice.

In light of the decisions handed down during the 27th CPSU Congress with regard to improving the ideological-political training of students, the tasks of higher educational institutes were given special attention during the All-Union Conference for the Heads of Social Science Departments. In a speech delivered before this conference, M.S. Gorbachev emphasized that: "The ability to orient oneself in today's complicated, contradictory and interdependent world is not a gift of nature. Nor is it obtained incidentally, together with mastering special disciplines. This ability must be taught to future specialists. Indeed a world outlook is not simply a totality of general information about the world. It also at the same time consists of perceived class interests and ideals, legal and moral norms, social priorities and humanist values -- all of this serves to determine the line of behavior to be followed by an individual in life and his responsible attitude towards society and himself."

An extremely important aspect of the work being carried out at our VUZ's is that of specialist training -- the organizers of agricultural production. Such work has been in progress since 1980. Special groups of students to be given such training are formed as a rule from individuals who possess secondary specialized educations, operational experience and who have displayed an inclination for administrative work and also activists from student social organizations. Workers from local party and agro-industrial organs participate in the work of staffing these groups of production organizers and also in conducting the exercise.

The students study special courses in the psychology of administrative work, professional ethics, organization of the work of leaders and others. After completing a theoretical course, the students are sent to leading agricultural enterprises where they acquire practical production experience under the direction of experienced production workers -- sovkhoz directors, kolkhoz chairmen, chief specialists.

Instruction in such groups is completed by defending the final work concerned with production administrative matters. Each year, up to 8,000 students receive such instruction in departments for the training of production organizers at agricultural VUZ's.

A practical solution for the tasks assigned to the higher school by the 27th CPSU Congress is associated with the implementation of a whole complex of measures for reorganizing all of the components of higher education. Among these measures, a special place is occupied by the operational methods employed by the professor-teaching staff of VUZ's because of the effect they have on the student youth, on the intensification of theoretical and practical training and on improving education. Constant improvements and changes in this staff require extremely tense work by all of the collectives of departments, faculties and by the rectors of the higher educational institutes.

At the same time, radical improvements in the quality of specialist training are based upon the maintenance of a close link between the training process and all VUZ activity with production operations. This link is manifested in various forms, the most active of which is the creation of department branches at enterprises. At the present time, the agricultural VUZ's have more than 400 such branches in operation at leading farms. Here the students are able to become acquainted with real experience in production management, its forms and methods. The use of farm leaders and specialists for conducting the exercises serves to ensure more thorough and detailed mastering of the material.

Life is raising substantially the requirements being imposed upon the work of training-experimental enterprises of VUZ's, as bases for the practical instruction of students and for introducing the results of studies carried out by VUZ scientists, students and post-graduate students. Thus the problem is: in terms of production level, the training-experimental enterprises must lead the leading farms in their region by 5-10 years.

A chief trend in radical transformation of the higher school is integration of the training process, the VUZ science and production. In view of this fact, we are planning the creation at a number of VUZ's of training-experimental enterprises, training-production combines, experimental stations, planning-technological and experimental-design bureaus and training-scientific-production associations.

It has been proposed that the organization of such associations be based upon the principle of unified administrative, scientific and economic administration for all subunits; this will make it possible to utilize the available personnel and also the training-material, scientific-experimental and production-technical resources in a more efficient manner. All of this must promote the training of modern specialists of the new type and activate the development and introduction of the results of completed studies into kolkhoz-sovkhoz practice on an extensive scale.

As a result of the implementation of these recommendations, the necessary conditions will be created for concentrating financial and material resources and combining a number of subunits (motor vehicle pools, construction-repair, municipal and others) which provide services for a VUZ, the work of VUZ collectives in solving tasks confronting training-experimental enterprises will be increased and a positive effect will be generated with regard to raising the creative potential of students and the professor-teacher staff.

Important recommendations are being advanced with respect to changing the organizational forms for training APK specialists, particularly in connection with the creation of cost accounting higher educational institutes, the organization of on-site and correspondence course training for specialists and so forth.

An equally important task of the scientific-pedagogical collectives of VUZ's is that of intensifying their activity in the area of scientific-research work and introducing the achievements of such work into operations.

During a June (1985) conference in the CPSU Central Committee on matters concerned with accelerating scientific-technical progress, M. S. Gorbachev assigned the task of raising the results being achieved through the VUZ science by a factor of 2-2.5. This requirement applies directly to the work of VUZ collectives within USSR Gosagroprom, which have a considerable scientific potential at their disposal: they include the operation of approximately 240 budgetary and economic contractual scientific subunits. The overall financing volume for research work exceeds 60 million rubles. Ninety higher educational institutes are participating in the implementation of 45 special purpose, scientific-technical and branch programs and the collectives of many of them have achieved considerable results in solving them. Moreover, the greatest results have been achieved by collectives which boldly engaged in intra-VUZ cooperation in the carrying out of studies and which are participating in the carrying out of state plans for scientific work.

Among the considerable number of scientific studies carried out by VUZ collectives, there are many works which are deserving of fixed attention. As one such work, I would like to cite the results of studies on the professional orientation of youth by scientists attached to the Moscow Agricultural Academy imeni K.A. Timiryazev, the Novosibirsk Agricultural Institute and other VUZ collectives, which eloquently confirm the thesis advanced by K. Marx that "the speed at which a young man learns to operate a machine in turn eliminates the need for training a special category of workers who operate machines exclusively" (K. Marx, F. Engels, Works, 2d Edition, Vol. 23, p 432). Work carried out at the Novosibirsk SKhI [agricultural institute] testifies to the fact that youth who master specialized professions prior to the 8th grade in a general educational school tend to obtain the most stable agricultural professional orientation.

In this regard, recommendations are being developed at the present time for carrying out a serious experimental check on a basically new and complete model for a continuous system for training personnel for agriculture. A rural general educational school that is closely integrated with leading agricultural enterprises is being advanced as the main primary element of such

a system. In the opinion of the authors, this will make it possible to create an orderly edifice for agricultural education, the foundation for which will be a high worker category as a mandatory stage for obtaining diplomas for secondary specialized and higher educations, which in the final analysis will serve as the prerequisite for intensive training of workers of the new type.

In the work of improving the use of scientific potential, an important role was played by the coordination of studies with the scientific institutes of VASKhNIL [All-Union Academy of Agricultural Sciences imeni V.I. Lenin] and the USSR Academy of Sciences and also intra-VUZ division and coordination of labor in the carrying out of studies. All of this made it possible to create conditions for thorough fundamental studies, for shortening the length of such studies and for introducing the results of these works into operations on a more extensive scale.

Nevertheless, in comparing the work carried out against the potential of the VUZ science, it must be recognized that the scientists of agricultural higher educational institutes are under a great obligation to the party and people. The results of studies and the scales for the introduction of completed works in many scientific areas still do not conform fully to the production requirements. The VUZ's are still not making sufficient use of their considerable intellectual potential for solving scientific-technical problems and the socio-economic tasks of the rural areas and working time is being expended in an inefficient manner, especially that of highly skilled scientists. Considerable resources are being diverted for improving existing and quite often unpromising technologies and for the creation of machine working parts the characteristics of which are not superior to those being produced serially.

The organization of work for the development of science at VUZ's is not satisfying fully the modern requirements, only weak use is being made of the reserves available for raising the effectiveness of comprehensive scientific studies and the measures required for obtaining a maximum return from resources allocated for scientific work have not been undertaken. At a number of VUZ's, sluggishness is being tolerated in the matter of overcoming derelictions and shortcomings in scientific and scientific-organizational work. Quite often the scientists are not displaying proper persistence when introducing the results of scientific studies into the national economy.

At the same time, the organization of scientific-research work is troubled by a number of objective difficulties. First of all, the capital-labor ratio for agricultural VUZ's is low. The equipping of departments, especially scientific-research laboratories, with modern instruments is clearly inadequate: there is a shortage of computers, amino acid analyzers, spectrophotometers, electronic microscopes, thermostats, chromatographs and other modern items of technical equipment. The VUZ's are experiencing shortages in all-round laboratories for the analysis of feed, soil, milk, wool and others. The situation with regard to the automation of scientific studies and metrological support is unsatisfactory.

Obsolete and worn out equipment is in use at many institutes. This is affecting the accuracy of studies and it is complicating to a considerable



degree the carrying out of scientific-research work in a high quality manner. The overall requirements for laboratory equipment and instruments are being satisfied by only 50-60 percent.

The volume of appropriations being made available for science is inadequate. Of 143 budgetary subunits, studies on subjects approved by GKNT [USSR State Committee for Science and Engineering] have still not been launched in 17 of them owing to a lack of the required resources. More than 40 scientific subunits consist of less than 10 individuals. A number of problem laboratories, experimental stations and scientific-research sectors are included in the third category according to wages. The system for coordinating scientific studies is in need of serious changes, there is no efficient system for organizing the introduction of completed works and the problems concerned with effective material incentives for the introduction of efficient scientific works have not yet been resolved.

The orientation of students towards intensive scientific creativity must play a tremendous role in the training of competent, intellectual and socially active specialists of the new type. A well thought out and informal implementation of comprehensive plans for attracting students to scientific work throughout the entire period of their instruction, the carrying out of course and diploma projects in conformity with production requirements and their introduction into operations at kolkhozes and sovkhozes are considered to be very important in this regard.

At the present time, more than 80 percent of the students engaged in daytime instruction are participating in various forms of scientific-research work. An expansion is taking place in the practice of creating student design bureaus, training-scientific-production detachments and detachments for introducing new developments into operations, groups which are actively engaged in publicizing the scientific works of VUZ's. However, there is a great amount of formalism and unsolved problems in this important work.

In the interest of radically improving the training of cadres of agricultural specialists, work is being carried out in connection with the development and implementation of a complex of measures aimed at reorganizing the entire system of higher agricultural education, measures which will ensure an increase in the professional level of specialists in keeping with the production requirements. One important task is that of improving the staffing of VUZ's with new contingents of students. For the purpose of carrying out this task, the majority of the VUZ's have organized direct contacts with RAPO's [rayon agro-industrial associations], kolkhozes, sovkhozes and military units. The VUZ's conclude direct agreements with enterprises for the training of specialists. Extensive use is being made of rayon and oblast gatherings of members of student production brigades and seminars and conferences for agricultural workers for the purpose of publicizing higher agricultural education. Jointly with local party and soviet organs, the plan for the acceptance of rural youth, with consideration being given to the personnel requirements in the various regions of the country, has been expanded and defined more precisely.



A great amount of attention is being given to the acceptance into VUZ's of rural youth, who are so enrolled by agricultural enterprises and who receive grants for the period of their training. This makes it possible to raise the effectiveness of personnel training and it improves their adaptation to and retention in production. In 1986, 81 percent of the students undertaking daytime training were rural youth and of this number approximately 53 percent were receiving grants from farms.

The training-material base of VUZ's has undergone substantial development in recent years. The use of technical means of instruction is expanding. At the present time, television centers have been created at eight VUZ's and more than 75 percent of the VUZ's employ educational television. On the average, for every agricultural VUZ there are eight automated auditoriums, five classes for control and instruction and two language study rooms. During the years of the 11th Five-Year Plan, the VUZ's were supplied with approximately 100,000 units of technical means of instruction valued at 39 million rubles. The creation of appropriate branches at all VUZ's is being completed in the interest of raising the effectiveness of this instructional equipment and also for ensuring a unified methodological approach for their use.

In the matter of personnel training, importance is attached to ensuring that the students are supplied with textbooks and working aids. Groups of authors representing 74 VUZ's and 29 scientific-research institutes, including leading scientists, are participating in the work of writing these textbooks. Specifically, academicians and corresponding members of VASKhNIL [All-Union Academy of Agricultural Sciences imeni V.I. Lenin] are participating in the writing of 41 textbooks. The requirements are presented during the course of preparing the manuscripts for them: to reflect promising and intensive production technologies and new trends and directions to be followed in developing the country's agro-industrial complex. Textbooks which are assigned a positive evaluation are republished. Over the past five-year period, they constituted more than one half of all literature published.

Further integration of the training-educational process, scientific-research work and experimental production, together with an improvement in the technological training of students, will make it possible to raise the quality of the specialists being produced and to utilize in a more active manner the scientific potential of VUZ's for raising the intensity of farming and animal husbandry on farms and at enterprises of the agro-industrial complex.

An acceleration in scientific-technical progress raises a need for achieving a considerable improvement in the system of post-VUZ education -- improving the skills of agricultural and APK specialists on the whole. The system for improving the skills of agricultural workers, created in 1966, includes 180 republic schools for improving skills, 86 schools for agricultural administration and 94 departments for improving the skills of agricultural VUZ's. They ensured the retraining of 2.3 million agricultural specialists and the training of more than 56,000 individuals for advancement to the position of farm leader.

A radical reorganization of the educational process is underway at the present time, with emphasis being placed upon the final results to be achieved.

Towards this end, the instruction periods have been shortened, the duplication of VUZ material has been eliminated in new programs and the plans call for a thorough study of the new economic mechanism, the relationships between branches of the agro-industrial complex, the methods for the storage, processing and standardization of agricultural products and the new progressive technologies for production. An expansion has taken place in organizational-administrative training and in the study of automatic systems for controlling production with the aid of computers and the link between the training process and practical work is being strengthened. No less than 50 percent of the training time is being set aside for conducting exercises under production conditions at leading enterprises and training-experimental farms of VUZ's.

All of these measures must strengthen fundamental training and raise the skills of the specialist-graduates of VUZ's within the USSR Gosagroprom system. In combination with thorough practical knowledge, this will define the high professional mobility of each specialist, his capability for freely adapting to the diverse types of information and his ability to take note of and to utilize in a timely manner new and leading developments and to lead a collective in solving the very important production tasks assigned to the APK.

The party and government have assigned the higher agricultural school with a task of tremendous social importance --to train specialists and leaders of kolkhozes, sovkhoses and other production enterprises of the APK who will be capable of achieving the accelerated intensification of agricultural production. The experience accumulated by VUZ's and the knowledge and initiative of professors and teachers -- all must be devoted to solving this most important task.

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## CIVIL AVIATION

### PROSPECTS FOR THERMONUCLEAR-POWERED AIRCRAFT DEVELOPMENT

Moscow NTR: PROBLEMY I RESHENIYA in Russian No 22, 18 Nov-1 Dec 86 p. 8

[Article by Yu. Meshkov under the rubric "Projects of the 21st Century": "The Thermonuclear Airplane: Superdense Plasma, the Aviation Fuel of the Future"; final five paragraphs are the caption for the preceding drawing]

[Text] Before we occupy our thoughts with events of the future century, let us go back nearly a hundred years ago.

The end of the 19th century. A new novel by Herbert Wells, "When the Sleeper Awakes" [sic; possibly H. G. Wells' "The Time Machine"] is published. After a long sleep, the hero wakes up in the next century, and he is ordered to fly around the world in an amazing machine which carries 1,500 passengers. The speed is also completely fantastic for a 19th-century author--2,000 kilometers per hour! The airplane is put in motion... with the aid of microbursts of droplets of a special substance.

What does all this mean, you will ask? The fact is that the calculations made by V. A. Belokon, senior staff scientist at the MGU [Moscow State University] and candidate of physical and mathematical sciences, shows that Wells was describing a thermonuclear airplane in his novel. Precisely a thermonuclear reactor installed in an aircraft is capable of providing the power needed for an airplane to fly within the parameters cited by the fiction. The principle of microbursts of a mysterious substance setting the huge aircraft in motion also is indicative of thermonuclear energy.

Let us give the great writer's foresight its due and return to our century, abundant with real technical concepts. In the 1920's, Academician V. P. Glushko--at that time a novice designer--proposed the concept of aircraft flight with the aid of electrical microbursts. It was not developed at that time because of the weight of the electrical battery to provide the power required for the microburst.

But three decades passed, and science discovered the principle of compressing thermonuclear fuel, resulting in a significant reduction in the scale of the explosion. Today, this essentially involves turning a nuclear explosion into a microburst with energy on the order of 100 megajoules. Just 1 kilogram of

hydrogen needs to be burned to obtain such chemical energy. Scientists have replaced the frightening concept of a "nuclear explosion" with a new concept--the microburst. The operation of a thermonuclear reactor--a source of immense power--is based on this.

The problem of obtaining controllable thermonuclear reaction still has not been solved (See NTR No 17, 1986). However, researchers in the world's most technically advanced countries are already actively conducting the search for the most promising directions for developing and utilizing thermonuclear energy. One of them is aviation. What awaits the airplanes of the future when a fundamentally new type of powerplant is on board? And is this even possible?

"It is possible and very promising--so the specialists believe," responded V. A. Belokon, who had agreed to be my guide in this complex problem.

"Why is it necessary to use thermonuclear engines in aviation?" I asked Valentin Anatolyevich. And I learned that the kinetic energy of an aircraft has increased by 10 times as much every 10 to 11 years. These data were obtained on the basis of an analysis of the best examples of aircraft design--from the "Ilya Muromets" airplane of 1914 to the rocket-powered space vehicle of the Shuttle type. Kinetic energy is a typical integral indicator of aeronautical engineering progress, since it incorporates the product of an aircraft's mass and the square of its speed. Precisely this indicator, the proportionate caloric power of an aircraft engine and its aerodynamic efficiency, is steadily increasing together with the increasing demand for air transportation.

According to predictions, the flying weight of an aircraft will reach 2,000 to 3,000 tons. At the University of California (United States), they are developing the design of a thermonuclear aircraft where this indicator exceeds 4,000 tons. Such gigantic aircraft carriers are capable of towing dozens of aircraft the size of a Boeing 747, which may be uncoupled and continue flying independently. This is done in order to save fuel.

However, the point is not only and not so much the economy. In modern transport aircraft which use traditional chemical fuel, the proportion of it amounts to about 50 percent of the overall weight. This means that an aircraft weighing 3,000 tons, let us say, must carry dangerously explosive fuel weighing 1,500 tons on board. Clearly, increasing the useful load in the future will entail tremendous difficulties. It is sufficient to say that aircraft manufacturers have managed to increase the weight of large aircraft by only 85 tons over the past 15 years. This is apparent by comparing the American Boeing 747 (320-380 tons) and the Soviet "Ruslan" (405 tons). Substantially increasing flying weight further by traditional means is not very efficient. This is why thermonuclear energy should come to the aid of aviation.

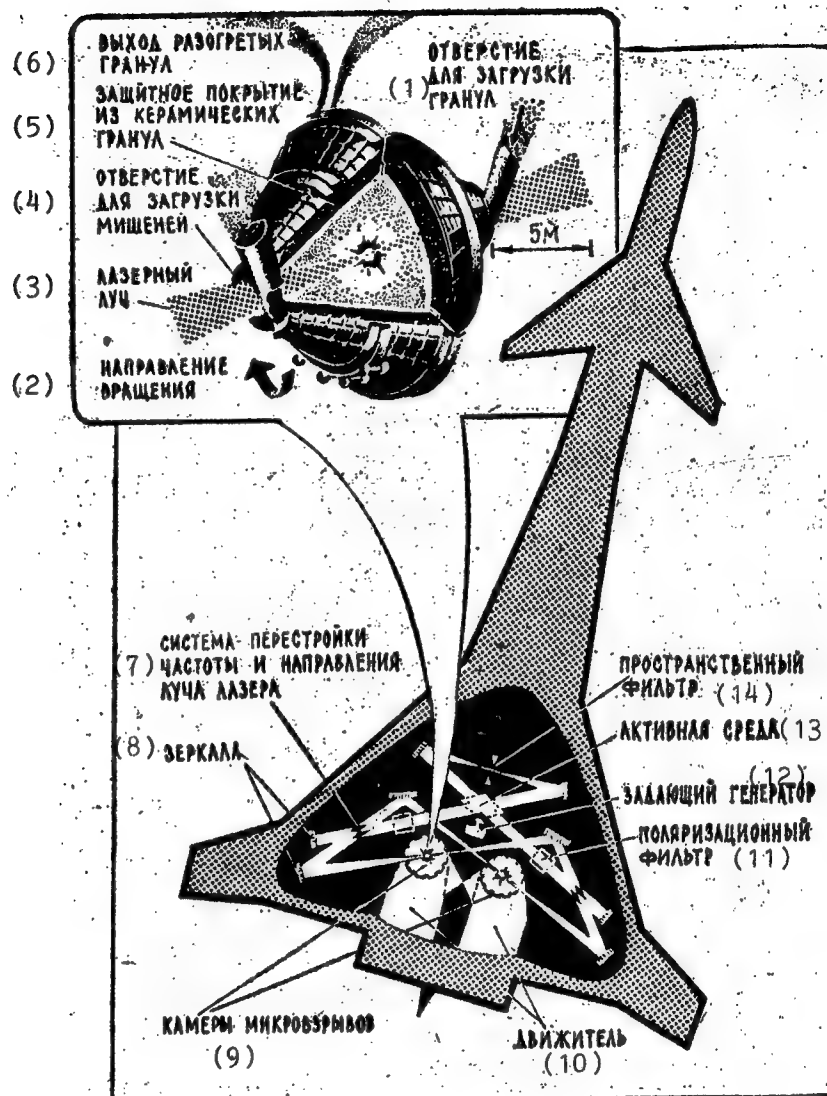
How do the specialists see the thermonuclear airplane of the future? The drawing, from a sketch by V. A. Belokon, depicts the hypothetical layout of such an aircraft with a thermonuclear powerplant. The whole point is in it. As with the fantastic aircraft of H. G. Wells, this aircraft is set in motion by microbursts of superdense plasma. But they are "stimulated" by a pair of beams from a powerful pulsed laser, which "fires" into two combustion chambers. Here combustion of the thermonuclear fuel, compressed to a density of 1 kilogram per cubic centimeter, takes place at a frequency on the order of 100 microbursts per second. The calorific value of this fuel is millions of times higher than the kerosene now being used.

In order to contain the energy of such microbursts, there is no need to create a heavy-duty shield for the combustion chamber, as an atomic reactor would require. Incidentally, in the latter case, so much massive radiation shielding for the aircraft would be needed that all the advantages of an atomic propulsive device as an efficient source of power would be reduced practically to zero.

But what about thermonuclear power? Today there is already a plan for a thermonuclear reactor, with walls made of silicon and carbon panels only 2 centimeters thick. It is light and a less radioactive reactor at the same time (it is shown in the drawing). It is not surprising that this type of reactor is attracting the attention of specialists in the field of aeronautical engineering. In addition, thermonuclear reactors are significantly safer than atomic reactors, and they produce much less radioactive waste, especially isotopes with a long half-life.

There is one more distinguishing feature which is extraordinarily important for the use of thermonuclear energy in aircraft: it contains practically no volatile radioactive substances. This means that in the event of an aircraft accident (and such a possibility must be taken into account), an increase in the radioactive background will take place only at the aircraft's point of impact without contaminating the atmosphere. This is why they are looking forward to thermonuclear power with particular eagerness. The abundance of various plans both for thermonuclear reactors as well the methods for utilizing them is due to the same reasons. All the problems have not been resolved here yet, but a great deal has been achieved.

With the increase in demands for power, the areas of technology where the problem of using new sources of energy is especially crucial are outlined more and more clearly. Aviation is one of such areas. It is quite apparent that the rate of growth of air transportation will not decrease in the foreseeable future. However, we cannot "dot" the entire sky with aircraft. There is one way out: resolve the problem by increasing the useful load and speed of aircraft. Thermonuclear power may become the key to developing such airborne giants.



- Key:
1. Port for loading granules
  2. Direction of rotation
  3. Laser beam
  4. Port for loading targets
  5. Protective coating of ceramic granules
  6. Discharge of heated granules
  7. System for retuning frequency and aiming laser beam
  8. Mirrors
  9. Microburst chambers
  10. Propulsion device
  11. Polarization filter
  12. Driving generator
  13. Active medium
  14. Three-dimensional filter

The drawing depicts the layout of an airplane with a thermonuclear powerplant proposed by specialists from the University of California. Intensified by an active laser medium, a laser beam comes to the focusing mirrors which concentrate it on the thermonuclear targets through a system of frequency retuning. Ignited by two opposing beams (this is necessary to compress the fuel), the microburst possesses power 100,000 times greater than the power of the laser itself.

The use of a complex system of mirrors makes it possible to put the thermonuclear powerplant in a limited space.

The drawing on top depicts one of the most recent plans for a thin-walled chamber to conduct thermonuclear microbursts. Ceramic spherical granules 3 to 5 millimeters in diameter which are pressed against the walls of the chamber when it rotates serve as thermal insulation (and as a coolant at the same time). Such protection is capable of withstanding heat of 2,300 degrees Kelvin.

The thermonuclear targets are discharged into the chamber through a port which also provides for transmission of the laser beam. The granules absorb the energy of the microburst and after being discharged from the reactor they release it for the working medium of the turbogenerator.

A similar arrangement of a "closed circuit" may be used for developing an "electric aircraft," where superconducting electric motors rotate the compressors of air-breathing engines. In this case, there is no longer a need for turbines. A ramjet engine version is also possible.

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## CIVIL AVIATION

### USE, FUTURE OF Mi-10K HELICOPTERS IN CONSTRUCTION WORK

Moscow VOZDUSHNYY TRANSPORT in Russian 15 Jan 87 p 3

[Article by VOZDUSHNYY TRANSPORT special correspondent S. Omelchenko: "Traveling Installers"]

[Text] Tyumen aviators headed by N. Babintsev recently installed a tower 120 meters high in Ekibastuz and erected a television antenna 200 meters high in Bayan-Aul with an Mi-10K helicopter. This "cluster" method makes it possible to reduce expenditures for an unproductive transit flight to the site of operations.

Not far from Lvov, Ukhta aviators are engaged in building an LEP [power transmission line]; the crews of S. Flyagin and A. Safoshin are working there. An Mi-10K crew headed by Honored Pilot of the USSR G. Maltsev, a winner of the USSR State Prize, flew to the Caucasus from the Komi ASSR. Help by the airborne installers was urgently needed there. Ye. Polyashchenko, commander of the flight collective of the Simferopol Aviation Enterprise for PANKh [use of aircraft in the national economy], is carrying out complicated operations with his crews in Mi-8 helicopters to rebuild a converter shop at the Combine imeni Ilich in the city of Zhdanov.

The very idea of using a helicopter to install high structures evoked a sarcastic smile at first. Not much time has gone by yet, and here are the results of collaboration by just the Kharkov construction workers and the Ukhta helicopter crews: working together over the preceding five-year plan they installed about 400 tons of metal structures (2,500 tons for the country as a whole), and more than 4,000 tons are being planned for the current five-year plan.

From the occasional use of helicopters in installation operations, a step has been taken toward planning installation by helicopter at a number of projects, primarily in erecting high structures and in renovating existing enterprises. A. Shulipa, chief engineer of a trust, has expressed the task ahead even more specifically: "turn the helicopter into an installation machine for an entire complex."

The advantages of using helicopters at construction sites are obvious. First of all, the periods of time for installation operations are shortened by several dozens of times as much and labor resources are economized. The need no longer exists for cumbersome facilities--a forest of guywires and machinery on the ground. And the trouble connected with moving a crane is not worth it. The helicopter is simply indispensable in renovating existing enterprises, and airborne installation work does not require that production be stopped for an extended period. In building high structures and power transmission line supports, installation operations can be combined with transport operations. And this serves the customer's purpose as well. Let us add here the high level of the safety procedure and the discontinuation of manual labor. Sharing his experience in working together with helicopter crews, A. Lyubchenko, brigade leader of installation workers in the Kharkov SU-127 [construction administration 127], emphasized insistently that none of the construction workers even scratched a finger during the entire time that a television tower was being erected.

Construction organizations using a helicopter for installation save tens of thousands of rubles on each project. Responding to a discussion on the expensiveness of flying time, one of the managers of a construction organization in the Ukraine cited an example from his own experience. Their trust paid 10,000 [rubles] for an installation by helicopter which lasted several days. But 28,000 were spent just for wages at the preceding project, and they were building it for 2 years.

Acceleration of the return on investment by turning projects over ahead of time promises hundreds of thousands in relative savings for the country's national economy.

Any one of the arguments in favor of helicopter installation may be supported by dozens of examples. The advanced new technology is already out of the experimental stage today. But future prospects for using helicopters are running into a number of problems requiring immediate solution.

The Mi-10K helicopters, which recently had their 10th anniversary, were intended for installation operations, according to their developers' concept. Their service life is coming to an end. There is no equivalent replacement for this aircraft at present and it is not foreseen in the near future. The more powerful and larger capacity Mi-26 does not substitute at all for its predecessors in a number of cases; in particular, they cannot be used in operations involving the renovation of old enterprises and in areas with intensive construction in progress. The propwash from its rotors simply tears off the roofs. There are also other drawbacks. The effort to enable the aircraft to "see" with the aid of television cameras has not been entirely successful. The Ka-32 does not take the place of the "flying crane," either. What solution is seen? Order a new series of Mi-10K helicopters from industry? Modernize them by taking operational experience into account? Is it more prudent to make use of the service life of the aircraft available? At present, two or three out of the entire fleet of them are engaged in installation, and the rest are carrying freight. It need not be demonstrated how unprofitable this is for the state. But then, it is advantageous for the aviation enterprise. The cost of a flying hour in transport work is 2,400

rubles for the Mi-10K and 1,900 rubles for the Mi-6 (with the same load). The system for planning helicopter work, as well as the wages for flight crews in installation, is so inadequate that in order to provide for the plan and the earnings of flight specialists upon their return from the most complicated installation operations, they are sent for transport work instead of granting relaxation to the persons and conserving the service life of the aircraft. But it proves to be impossible otherwise: the enterprise's plan must be fulfilled, and the "installers" must be allowed to accrue flying time and to earn.

Proposals to disperse the "flying cranes" around the country have been heard many times. But there are enough access roads in the settled regions of the country and it is not advantageous to use the "10" for transport work there. It is difficult to disagree. But after all, the helicopter is needed for installation operations, not for transport work. And doubts whether it will have a full workload at construction sites are being dispelled by the ever increasing interest of different ministries and departments in the potentialities of the "flying crane." The Ministry of Installation and Special Construction Work alone is prepared to make a request for several dozen projects over the next 6 months, on the condition that a helicopter will be allocated, of course. Power system construction workers also have been interested in using the Mi-10K. Installing power transmission line supports by the swinging method, together with bringing the huge structures directly to the place where they are to be set up, preserves extensive land areas which would be mutilated by equipment on the ground. But if all the requests which have not been met were placed in one stack (including those because of refusal by a client stunned from the start by the expensiveness of flying time), it would seem much more impressive than the reports on work that has been carried out.

The "flying cranes" should be permanently based near the place where they are utilized most frequently. One unit of the "airborne installers" should be located in the Ukraine, let us say. The only question may be the number of helicopters to be involved.

After concluding a contract with Aeroflot for 6 months or a quarter, a trust is ready to shift from abstract discussions on this topic to the work. But is it within one trust's power to take up the "portfolio of requests" for a rather large territory, coordinate their implementation, and resolve such complicated problems as planning the structures for helicopter installation and carrying out all the engineering preparation for projects?

A proposal such as this is suitable for a routine experiment. But isn't it time to make the transition from experimenting to series industrial production?

But extensive organizational rearrangement is necessary for this. First of all, an organ is needed to plan installation operations, take upon itself the economic justification for using a helicopter on each specific project, and seek out and consider applications. The department of the GUARP [Aviation Work and Transport Operations Main Administration] is not coping with this. Its attempt to plan installations amounts to coordinating applications. Within

the range of problems being resolved by the department, it is difficult to expect more of it in this direction. The planning of operations and the resolution of problems related to this have been entrusted to the Ministry of Installation and Special Construction Work by a joint decision of the Gosstroy and the Ministry of Civil Aviation.

To a large extent, success in airborne installation work depends on the experience of ground-based specialists in working with a helicopter. Even working with a hammer requires specific experience. Without it, we risk hammering our fingers. But here is the helicopter. G. Maltsev, who has about 200 unique installation operations to his credit, recalls that not one operation was immediately successful if the ground-based brigade lacked experience. On the other hand, the necessary contact was established right away with the installers brigade from Kharkov, with which they had worked at one time, even after 5 years had elapsed. Instructions alone are not enough. Training exercises are necessary. And it is even better if permanent ground-based collectives work side by side with the helicopter crews in installation. This will reduce flying time and monetary expenditures.

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CSO: 1829/127

## CIVIL AVIATION

### OFFICIAL RESPONDS TO COMPLAINTS ABOUT Mi-8 HELICOPTER

Moscow VOZDUSHNYY TRANSPORT in Russian 24 Jan 87 p 2

[Article by A. Subbotin, director of the GosNII GA [State Civil Aviation Scientific Research Institute]: "With Half Efficiency"; for a translation of the article referenced below, see pages 61-62 of JPRS-UNE-87-009 of 5 February 1987]

[Text] B. Bondarchuk, chief inspector pilot of the Kirghiz Administration of Civil Aviation, wrote to the newspaper on Mi-8 helicopters' poor operating efficiency under mountain conditions. His letter was published in VOZDUSHNYY TRANSPORT No 135 of 11 November 1986.

The problems mentioned are important, and for this reason the Ministry of Civil Aviation, jointly with the Ministry of the Aviation Industry, are working continuously to eliminate shortcomings, particularly with regard to restoration of the Mi-8 thrust performance. A provisional change in the Flight Operations Manual in effect since August 1985 makes it possible to reduce the losses in load-carrying capacity established in the Ministry of Civil Aviation directive mentioned by the author.

The unalterable part of the structural mass of Mi-8 helicopters turned out by industry since 1977 has not exceeded 7,200 kilograms, but as a result of the changes made since 1985, it has been reduced to 7,119 kilograms.

According to data available at the GosNII GA, the structural mass of Mi-8 helicopters has been increased by no more than 25 kilograms during maintenance over 10 years of operation. It should be kept in mind that additional equipment weighing more than 200 kilograms may be installed in the helicopter by reducing the payload (a vibration damper, an electric hoist, an additional fuel tank, and so forth).

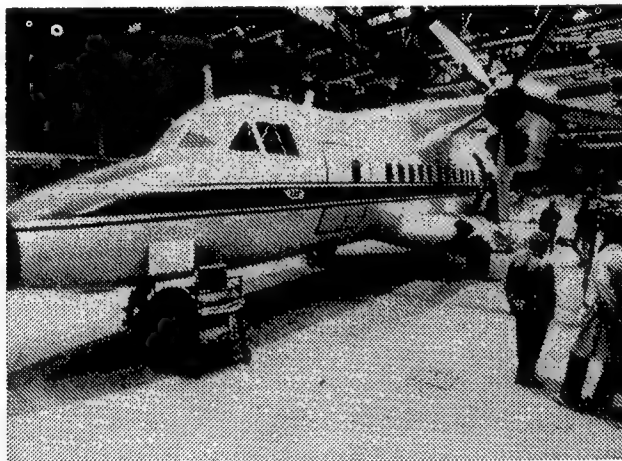
The problem of authorizing the shutdown of Mi-8 helicopter engines in areas above an elevation of 3,000 meters is being resolved, and a bulletin is being prepared in this connection. Such actions have been authorized in the Kirghiz Administration of Civil Aviation since July 1985 by an appropriate Ministry of Civil Aviation and Ministry of the Aviation Industry decision.

Additional research to determine the possibility of increasing the number of landings daily in a gravimetric survey is being proposed in 1987. Work on restoring the thrust performance and reducing the structural mass of the Mi-8 helicopter will be continued.

## CIVIL AVIATION

### CZECH-BUILT L-610 TRANSPORT PROTOTYPE DISPLAYED

[Editorial Report] Moscow VOZDUSHNYY TRANSPORT in Russian 22 January 1987 page 3 and Moscow IZVESTIYA in Russian 5 February 1987 page 1 carry a CTK-TASS photograph of an L-610 prototype in the final stage of assembly at the LET Aviation Plant in the Czechoslovakian city of Uherske-Hradiste. Created by LET designers at the request of the Soviet Union, the L-610 is intended to replace the L-410 on internal Aeroflot routes. Compared to its predecessor, the L-610 will be faster and more fuel-efficient, and will have increased lift capacity. Flight testing is expected to begin this year. After completion of testing in the USSR, production is to be under way before the end of the current five-year plan.



The L-610 prototype in one of the plant's shops.

CSO: 1829/147

## MOTOR VEHICLES, HIGHWAYS

### MINISTER ON AUTOMOTIVE INDUSTRY ECONOMIC CHANGES

Moscow EKONOMICHESKAYA GAZETA in Russian No 2, Jan 87 pp 6-7

[Interview with Nikolay Andreyevich Pugin, USSR Minister of the Automotive Industry, by correspondent N. Prikhodko: "The Industry Switches to Self-Financing"; date and place not given; first two paragraphs are EKONOMICHESKAYA GAZETA introduction]

[Text] Beginning in January 1987 five industrial ministries are making the transition to full cost accounting, self-financing, and non-subsidized production. Among them is the USSR Ministry of the Automotive Industry (Minavtoprom).

Today Nikolay Andreyevich Pugin, USSR Minister of the Automotive Industry, answers correspondent N. Prikhodko's questions on the features of the branch's operation under the new conditions.

[Question] What tasks await the industry in the 12th Five-Year Plan?

[Answer] This five-year plan the automotive industry must secure a 1.3-fold increase in the volume of production. At the same time, the equipment now being produced will be basically replaced with new equipment. The entire growth in production must be obtained through increasing labor productivity, without increasing the number of workers. A 75-80-percent increase in the consumption of material and fuel-energy resources will be covered by their economy and reduction in the specific quantity of metal for production.

In order to satisfy the growing demand on the part of the national economy and the country's population for automotive industry products it is necessary to secure the accelerated development of motor vehicle production that corresponds to world standards in terms of its technical level and quality, as well as the innovation and modernization of production. The output of automotive equipment that meets the world technical level should be 80-90 percent implemented by 1990 (with newly developed technology, up to 100 percent). Profit--an indicator of the resultfulness of the industry's operation--will increase almost two-fold.

Taking the future into consideration, the ministry has developed and approved a program of setting up and implementing new and modernized equipment in the 12th Five-Year Plan. It stipulates radical modernization and the adoption of 250 new vehicle models, trailers, engines and other products.



The program is designed for two stages. The first--1986-1987--is allotted for modernization of current production and of the models being adopted for production with a view to reducing or liquidating the gap in comparison with the best foreign analogs. The second stage of the program--1988-1990--is organizing new and further modernized models for production with the aim of achieving basic indicators of the level projected for this period in the world motor vehicle industry. The program also stipulates the creation, in 1986-1990, of a design process stock of the basic types of motor vehicle equipment in the 13th Five-Year Plan and up to 2000.

It is clear that without a fundamental restructuring of the economic mechanism, establishment of a flexible and efficient control system and acceleration of scientific-technical progress it will be impossible to solve the main problem.

The industry has the initiative-filled experience and creative work of the AvtoVAZ [Auto Volga Motor Vehicle Works] collective which, since 1985, has been operating on a fully self-supporting, self-financing basis, when the production, technical and social development of the collective is accomplished by means of money that they earned. The results of the work of the association attest to the fact that the mechanism in operation here allows the solution of problems of renovating the equipment produced, accelerating the creating and adoption of new and competitive vehicle models, and successfully carrying out the social program of development of the collective. Thus, AvtoVAZ has, in the shortest possible time, developed a design and is already producing the VAZ-1111 "Oka" and other prospective models.

After careful analysis of the possibilities for disseminating it, it has been decided to use the experience of the leading collective in the industry for the solution of problems in the 12th Five-Year Plan.

[Question] On what is the self-supporting activity of the industry's associations and enterprises to be based? Can one say that the industry is armed with AvtoVAZ's experience in full measure and in its "pure" form?

[Answer] Profit has been placed at the base of the self-supporting activities of ministry associations and enterprises as the most important summarizing indicator. Profit will be the primary source for self-financing. Scientific-technical, production and social development will be secured by the means that enterprises have earned themselves.

A direct dependence has been established between resources and income, which the collectives dispose of on their own, and the efficiency of their operation. When they are completely self-supporting, enterprises have a special incentive to increase total profits: deductions will be made from profit for the budget and for centralized branch funds at a steady rate over the five-year plan. Thus, collectives can no longer be indifferent to how much new equipment will cost, what kind of economic effect its implementation will have, and whether the quality of raw materials, materials and component parts being received will suffice to bring automotive production up to the required technical level.

The self-financing conditions that have been propagated in the industry differ somewhat from the mechanism that is in operation at AvtoVAZ. Unlike the VAZ

system, this branch's associations and enterprises reserve fees for funds, the size of which varies from 2 to 12 percent (depending on the level of profitability). The method for distributing profits has also been changed. At the AvtoVAZ association, all the norms for forming economic stimulus funds are determined by the sum total of profits. But according to the conditions the branch is changing over to, the norms of formation for these funds are established from the profits remaining at the disposal of the associations and enterprises.

In other respects the mechanism is pretty much the same. I particularly want to note that it is specifically AvtoVAZ's experience that is recommended for adoption by branch enterprises in developing a complex of measures to strengthen self-support within the industry.

Just as for AvtoVAZ, four basic indicators beside profit have been established for branch enterprises under fully self-supporting conditions: production of the most important range of products in real terms, growth of labor productivity, renovation of current production, and hard-currency receipts, including freely convertible hard currency. Stable economic norms will be brought to the enterprises. There are ten of them. Among them are payment norms for production funds, profit deductions for the state budget and the ministry; norms for the growth of the general wage fund, formation of a fund for the development of production, science and technology, a fund for material encouragement, and a fund for social-cultural measures, housing construction, etc.

Profit remaining at the disposal of associations and enterprises after payments into the budget and deductions for the ministry is directed, in approved amounts, to a fund for the development of production, science and technology, to a social-cultural fund, and to a material encouragement fund.

A fund for the development of production, science and technology (FRPNiT) will be set up in the industry. It is designed to create equal conditions for enterprises in the area of technical development, using their own means. FRPNiT is aimed at technical retooling of production, renovation of the product, conducting scientific-research and research-development work, and setting up scientific-technical centers and other activities connected with the development of production. Profit and amortization toward complete restoration are the primary sources for the formation of the fund.

Under the new conditions there is a significant increase in the role of the fund for social-cultural measures and housing construction as a basic source for the financing of housing construction and social-cultural-communal facilities. To cover the expenses connected with the maintenance of these facilities, it is recommended that labor collectives allocate no less than 50 percent of the total sum of the fund.

There is one more feature. The ministry has the right to switch over to self-support and self-financing the scientific-research, research-development and design-technological organizations that make up the scientific-production and industrial associations. There should be a direct link here between workers' wages and the technical level, reductions in the time and expenditures for the development and implementation of new equipment and technology, and the end results of the operations of specified associations.

[Question] So, under the new conditions profit is the basic source of self-financing. But what is to be done with the unprofitable and marginally profitable enterprises?

[Answer] We have thought out the answer to this question particularly thoroughly.

At the present time in the automotive industry there are 11 unprofitable enterprises. These are mostly enterprises in Glavpodshipnik [Chief Directorate for the Production of Bearings]. Among them are GPZ-14 (in Prokopyevsk), which has a loss of more than two million rubles in the plan for 1987, GPZ-6 (in Sverdlovsk), with a loss of more than 2.5 million rubles, and others.

We will say directly that enterprises were not sufficiently oriented toward reducing losses before: norms for the formation of economic stimulus funds did not depend on the end results of the work or on increasing the profitability of production.

Starting in 1987 the ministry is putting these enterprises on a subsidy from centralized funds, but on one condition: in the course of a five-year plan they must be at the level of profitable enterprises. The above-mentioned GPZ-6 is required, in 1988, to reduce its 1987 losses by 30 percent; in 1989 they must be reduced by 60 percent, and by 1990 it must become a profitable enterprise.

[Question] Restructuring of the economic mechanism in the branch, as you pointed out, should lead to increases in technical level and vehicle quality, and to faster innovation and modernization of production. And how do things stand today?

[Answer] It is impossible, of course, not to notice that big job that is being carried out by associations and enterprises in preparing and adopting new models. However, all the practical experience of our operation in the last ten years speaks to the unsatisfactory, exceptionally long time for renovation of products. The implementation process for new models goes on for many years at KRAZ [Kremenchug Motor Vehicle Works] and UAZ [Ulyanovsk Motor Vehicle Works]. And the situation at Glavavtobusprom [Chief Directorate of the Bus Industry] plants is no better.

An evaluation of the technical level of automotive equipment conducted in May 1986 showed that only 4 out of 18 models produced meets the current technical level--the front wheel drive passenger car VAZ-2108, the agricultural vehicle Ural-5557 and the all wheel drive multi-purpose vehicles GAZ-66 and Ural-4320. Out of those vehicles ready for production, only 53 percent were evaluated as corresponding to the highest world standard.

The basic problems with the domestic models that were negatively evaluated were a lower level of failure-free performance in comparison with analogs, increased fuel consumption, and higher specific consumption of materials. Domestic automotive equipment is also inferior in terms of design and comfort.

The non-conformity of a number of models of the most important types of production to the current technical level that showed up during the certification lead to the fact that the volume of production with the state Emblem of Quality

has gone down from 36.9 percent in 1985 to 32.6 percent in 1986. By the way, these data have already been published in EKONOMICHESKAYA GAZETA No 44 in a Gosstandart report on the results of the certification of industrial products.

[Question] Apparently the situation will become still more complicated with the introduction of the state inspection at enterprises?

[Answer] I will not try to hide it; the state inspection has shown that a number of enterprises are still insufficiently prepared for operation under the new conditions. At the Groznyy Transport Machine Building Works, for example, because of non-observance of the GOSTs [State All-Union Standards] and technical conditions, Gosstandart organs took seven million rubles out of the volume of sales; 5.7 million at the RAF [Riga Bus Works] microbus plant, and two million at the AvtoZAZ [Auto Zaporozhye Motor Vehicle Works] Production Organization. The main reasons for such a situation are insufficient technological discipline, production that is poorly equipped with technical means of control and product testing and, as a rule, the unsatisfactory condition of design-technological documentation.

Of course, we give similar facts a principle evaluation and make conclusions, including organizational ones. After all, the state inspection is oriented primarily against those who have forgotten about their professional responsibilities. Thus directors have recently been let go and punished in the administrative order at the Yaroslavl Motor Works, the Zavolzhsk Motor Works, RAF, the Likino Bus Works, the Frunze Auto Assembly Works and other enterprises.

It is impossible not to note that the new form of control helps enterprises to discover and mobilize reserves more quickly to increase the quality of production, and to significantly strengthen the responsibility of design-technological services. I will remind you that a stricter approach to the evaluation of product quality is facilitated now by new conditions of economy: sanctions applied to enterprises are reflected in increased profits remaining at the disposal of collectives.

Both the ministry and the labor collectives at associations and enterprises fully understand that the state inspection is only the first stage in a program of decisive change in product quality. The next stage is improving the consumer properties of domestic motor vehicles and bringing the quality of production up to the level of the highest world standards. We have to think about tomorrow's motor vehicles.

Scientific-technical centers are now being set up for the creation of high quality vehicles with leading designs at the VAZ, GAZ [Gorky Motor Vehicle Works], KamAZ [Kama Motor Vehicle Works], UAZ and other production associations. At the Volga Motor Vehicle Works the scientific-technical center stipulates coordination of research and design-technological subdivisions, experimental and testing-industrial bases in order to carry out the development and preparation for production of one potential base model and two modifications annually; in the next five-year plan they are to accomplish the accelerated creation of a completely new generation of passenger cars.

Small-series shops are being set up in virtually all of the branch's production associations, which will allow a sharp expansion in the scale of experimental operations and a reduction in the time needed for the introduction of new designs. Measures have been adopted to strengthen the designer service, mainly at the VAZ, AZLK [Moscow Motor Vehicle Works imeni Lenin Komsomol], ZAZ and GAZ production organizations by attracting the graduates of industrial arts training schools.

[Question] What problems still need solutions and clarification in the transition to self-financing?

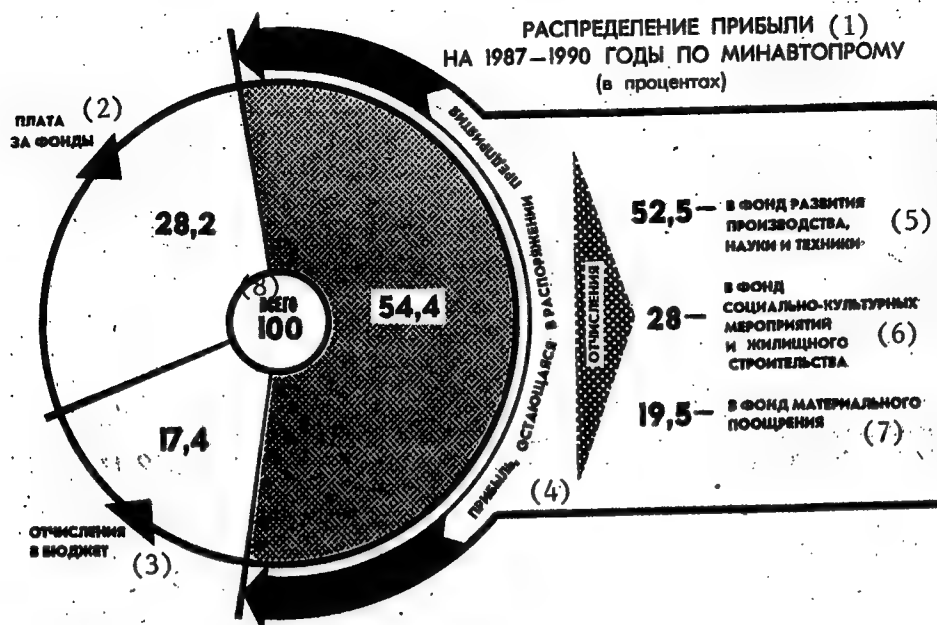
[Answer] There are such problems, of course.

To speed up the technical retooling of associations and enterprises and in cases where their own means do not suffice, widespread use of the credit mechanism is contemplated. However, practice shows that problems often arise in getting credit. It may be that it is advantageous for the USSR State Bank to set limits on credit for the ministry, and this would allow it to be utilized more efficiently.

In self-financing conditions, the number of planning indicators for the enterprises is significantly reduced. However, their book-keeping situation may not change now, since local planning organs need to reconcile the indicators for enterprises that are located in one territory but operating in various management conditions. Clearly, this problem requires a special solution.

Beginning in 1986, industry began to use a system of discounts from wholesale prices on premium quality merchandise. However, the system of applying discounts requires, in our opinion, serious changes. Take an example. In 1986 the ZIU-682 trolleybus, produced by the Engels Plant imeni Uritskiy, was not certified at the VKK [expansion unknown] because of a motor produced by a Minelektrotekhprom [Ministry of Electrotechnical Industry] enterprise as first quality. Thus, in the situation there was an almost 150-ruble discount from the price of the motor--900 rubles from the total price of the trolleybus. By special resolution of the USSR Gosstandart the discount now applies only to the price of electrical equipment. But why is a special resolution necessary for this? In our opinion, the price discount should always apply only to the specific guilty party.

And more. The active mechanism of economic influence on enterprises for various omissions in their work is extraordinarily complicated (of fines alone there are over 120). In our opinion it is necessary to put the system of sanctions in order. This is especially important now, when work is underway that is connected with the adoption of USSR Law on Socialist Enterprises (Associations).



Key:

1. Distribution of profits for 1987-1990 for Minavtoprom (percent)
2. Payment for funds
3. Deductions for the budget
4. Profit remaining at the disposal of the enterprise--assignment
5. Into a fund for the development of production, science and technology
6. Into a fund for social-cultural measures and housing construction
7. Into a fund for material encouragement
8. Total



1. Growth rates for profit and labor productivity in the 12th Five-Year Plan
2. Total profit (percent for 1985)
3. Labor productivity

## MOTOR VEHICLES, HIGHWAYS

### DESIGNER ON MELITOPOL AIR-COOLED ENGINE DEVELOPMENT

Moscow ZA RULEM in Russian No 12, Dec 86 pp 3-4

[Article by T. A. Reppikh, deputy chief designer of the Melitopol Engine Plant: "The 'Airs' Are Still Alive"; first paragraph is ZA RULEM introduction]

[Text] More than 2 million "Zaporozhets" and LuAZ motor vehicles are still in operation. More than 2.5 million powerplants with air-cooled engines--the "airs"--have been produced for them by the Melitopol Engine Plant (MyeMZ). T. A. Reppikh, deputy chief designer of the plant, discusses possible interchangeability and prospects for their further production.

In order to resolve the problems of applicability and interchangeability it is necessary first of all to be aware that all MyeMZ powerplants were built on two base engine models: the MyeMZ-966 with a cylinder bore of 72 millimeters and the MyeMZ-968 with a cylinder bore of 76 millimeters. The basic differences between the base models are in the displacement and the center-to-center spacing of the transmission shafts. The displacement of the MyeMZ-966 engine and its subsequent modifications was 887 cubic centimeters (72 by 54.5 millimeters), and its power ranged from 27 to 30 horsepower (20-22 kilowatts) at 4,000-4,200 rpm.

The connecting dimensions and gear ratios of the main pair in the MyeMZ-966 transmission remained the same throughout the years, which ensured their interchangeability, except for transmissions intended for operation with an electromagnetic clutch gear. The last modification of the powerplant--the MyeMZ-966G, production of which was begun in 1979, is also an exception. The cooling system was changed in these engines: the air is injected into the vee of the cylinders, whereas in all the earlier versions of this section the fan draws off the air through the cylinder fins and heads.

In this modification, aside from the fan and its guide vanes, the crankshaft, oil pump and oil cooler were changed, but unit interchangeability with earlier versions was retained for them. The fan rotor is interchangeable with the rotor for the MyeMZ-968 model. We were able to reduce engine heat intensity by improving the cooling system, thereby increasing its reliability. Increasing oil pressure in the main lines also played a role in this.



In order to put the MyeMZ-966G unit in the "Zaporozhets," which has a compartment designed for engines with a "suction" cooling system (vehicles produced up to 1979), certain finishing operations are necessary. They were described in detail in the magazine (1980, No 4) and amount to shortening the 966-5224014/15 air ducts up to 50-70 millimeters from the surface where they are fastened to the body of the vehicle and replacing the lower mudguard.

The transmission designed for the MyeMZ-966G has been equipped with a clutch disengaging mechanism with hydraulic drive. The transmission with a mechanical clutch for vehicles made up to 1979 is also being acquired in spare parts; its index is 966G-1700010-10. Production of the MyeMZ-966G model powerplants is being decreased gradually; they are being replaced by MeMZ-968 units or their subsequent modifications.

The MyeMZ-968 powerplant was designed so that it could be installed in the "Zaporozhets" and LuAZ vehicles of both the early and later models, and for this reason its design configuration has been retained. The engine of the MyeMZ-968 model and its modifications has a displacement of 1,198 cubic centimeters (76 by 66 mm, 40 horsepower/29 kilowatts at 4,200 rpm). These parameters have provided for significant improvement in the vehicles' traction and speed. The spacing between the shaft axes in the transmission has been increased, the gear ratios have been changed, and the pinions and bearings have been reinforced. Everything taken together has increased the unit's reliability. Its service life has increased up to 125,000 kilometers. The MyeMZ-968 powerplant underwent modernization for a number of years, but the interchangeability of the basic components and units of both the engine and the transmission has been retained, which simplifies repair and the supply of spare parts.

The MyeMZ-968A engine, with 45 horsepower/34 kilowatts achieved by increasing the compression ratio up to 8.4, was produced from 1970 to 1972. This required the use of AI-93 gasoline. Operating experience indicated that owners of "Zaporozhets" vehicles with this engine prefer to use A-76 gasoline, and output of the MyeMZ-968A model was discontinued.

In 1980, output of the MyeMZ-968B engine was begun. It differed in its complete set of equipment: a specially constructed double-barrel carburetor of the VAZ-2101 type combined with an air filter of original design and a modified exhaust manifold. This model was produced in a small series, principally for export. It was learned in the course of its operation that the well-known advantages of the dynamic qualities of a vehicle with a double-barrel carburetor did not compensate, in the owners' view, for the decreased economy, and they preferred the more economical version with a single-barrel carburetor for this reason. Output of the MyeMZ-968B was discontinued in 1982.

The MyeMZ-968N modification, equipped with a K-133 carburetor having an economizer with a forced idle stroke, has been produced since 1983 and is also coming off the assembly line at present.

A special modification of the MyeMZ-968 unit--its index is MyeMZ-969--is intended for equipping the LuAZ vehicles as a complete set. Its principal difference is its transmission, which has a fifth step-down gear and an

independent reverse reduction gear. Most of the components in the MyeMZ-968 and the "969," which have undergone modification, are also completely or partly interchangeable, since their increased reliability was achieved, as a rule, by using higher-quality materials, by improving the heat treatment or machining process, and less often by changing the design.

The reliability of the crankshaft, which was increased as the result of a change in the processes of smelting and inoculation of the cast iron, serves as an example. The durability of the ends of the valve lifters has been ensured by surfacing them with a layer of a special alloy, with subsequent phosphate coating of the lifters and cams of the camshaft.

In the infrequent cases where interchangeability is lost, the plant produces a component or unit for spare parts, fitted as previously, and with modified design.

Continuous modernization has enabled the plant to increase the service life of powerplants in the MyeMZ-966 group (30 horsepower) from 50,000 to 100,000 kilometers and the warranty period from 10,000 to 20,000 kilometers over 12 months. For the 40-horsepower units in the MyeMZ-968 group, the service life has been increased from 100,000 to 125,000 kilometers and the warranty period from 15,000 to 20,000 kilometers over 20 months. Changes in the design of MyeMZ powerplants have been covered in sufficient detail in the magazine (1978, No 6; 1980, No 4; and 1983, No 10, as well as in the "Information Service" section).

The Melitopol Engine Plant has to resolve important tasks in the 12th Five-Year Plan. On one hand, preparation is under way for production of the MyeMZ-245 powerplant of completely new design, intended for the promising ZAZ-1102 frontwheel-drive vehicle, with a liquid-cooled engine. On the other hand, there is to be further modernization and preparation of production of new modifications of engines with forced-air cooling. After all, their well-known drawback--the noisiness--does not cancel out the definite advantages, primarily the simplicity of design compared with available liquid-cooled engines.

In adhering to the basic principle of interchangeability of modernized powerplants with their forerunners, the plant is proceeding from the need to provide owners of the "Zaporozhets" and LuAZ vehicles acquired in the 1970's and 1980's with engines and transmissions of improved quality to replace the earlier ones, in the event that owners of these vehicles want to "put their heart" in their vehicles. We will be manufacturing spare parts for the engines and transmissions of earlier models in ever increasing quantity so that we can fully meet the orders of trade organizations in the 1987-1988 period.

Those who are already using vehicles from the Zaporozhye and Lutsk plants will be interested to learn that it is planned to improve the design of the MyeMZ powerplants in the future. It should be noted at once that the transmissions of the "Zaporozhets" and LuAZ vehicles have a reliable design, in our view, and for this reason major modernization is not being proposed for them, but changes would be limited to certain design and engineering measures.

From the consumers' point of view, there are still complaints about the engine: about the insufficient durability of the valve timing gear, the poor starter reliability and the quality of the carburetor. Cases of premature wear in the cylinder and piston grouping are not uncommon, particularly on engines with air filters having manufacturing defects. This is especially serious when traveling over dusty country roads or when there are long intervals between filter cleanings. The plant is taking very important steps to eliminate such defects as leaking from a "clean" chamber and oil loss. In order to increase the service life of the camshaft, the textolite pinion will be replaced by a metal one in the near future.

More than 20 powerplant design improvements have been introduced since 1983. In particular, we have already mentioned the K-133 carburetor with electronic control of forced idling and the recycling of fuel when the float chamber is filled. Its installation has made it possible to reduce fuel consumption under city conditions by 4 to 6 percent, to ensure good starting qualities, and to prevent vapor locks in the hot season. Resistor inserts were put into the spark plug tips, which reduced the amount of radio interference. The camshaft received an additional bearing, and the supply of oil to the pinion pair driving the oil pump and distributor was increased; their reliability and the timing of spark formation were improved considerably. Defects such as the seizing of the counterbalance [uravnovesivayushchiy mekhanizm] and deterioration of the end of the valve lifter and the tip of the pushrod (15Kh steel was used here) have been practically eliminated. Reliability of the clutch gear was increased by using friction linings made of the "321-24" type material, which has wear resistance 1.5 times higher than the material used earlier. Packing of the split axles has been modified in order to prevent dirt from penetrating the transmission, which has resulted in premature failure of bearings and synchromesh units. Reusable gaskets of the BR-1 sealing material and a number of other improvements were introduced for sealing most of the joints. About 20 more steps aimed at improving engine quality and reliability were taken in the process of design analysis and production preparation.

Along with improving the series engines, we are planning in 1987-1988 to perfect modifications of them with improved power (44 and 47 horsepower) by increasing displacement up to 1,303 and 1,404 cubic centimeters (cylinder bore of 79 and 82 millimeters, respectively). Except for the cylinders, pistons and piston rings, these engines will be completely interchangeable with those now being produced and may be installed in any "Zaporozhets" or LVAZ vehicle if the owner desires.

Thus, the amount of design and engineering work in progress enables us concurrently to meet the interests of persons using our well-known air-cooled vehicles and to prepare for production of a new model engine.

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## MOTOR VEHICLES, HIGHWAYS

### EFFORTS TO IMPROVE KamAZ VEHICLE QUALITY

Moscow PRAVDA in Russian 15 Dec 86 p 2

[Article by Pravda correspondent N. Morozov: "A Difficult Test--the First Steps of a State Inspection at KamAZ"]

[Text] Brezhnev, Tatar ASSR--Such tension was unknown at KamAZ [Kama Motor Vehicle Works] even in the first days after starting up. For ten years running, the Kama vehicle workers have given the country trucks over and above the plan, and suddenly in November the vehicle assembly plant skidded and an alarming minus appeared on the score board.

Has the collective begun to work worse? No, people were working with the usual diligence. The speed of the conveyor diminished because "fresh-baked" dump trucks were subjected to the strictest quality tests on leaving the plant's gates. The KamAZs produced for the trial inspection were checked according to seven parameters. This is not such a vast questionnaire, however, not one dump truck received a high rating the first time. On the second day, the test detained 15 vehicles, and on the third, twice as many. . . The backlog slowly began to dissipate in the shops.

Although the vehicle makers stamp almost 70 percent of their production with the State Emblem of Quality, drivers have many grievances against the popular make. And, preparing to work under the tough conditions of increasing demands on the reliability of the vehicles, KamAZ technical services, together with their state inspection collaborators, investigated the recalls more deeply and developed the "KamAZ is Quality" program. They speeded up the certification of work places. An allied-field competition is getting underway in the shops according to technological networks. Thousands of vehicle workers have responded to the initiative of the adjusters brigade of USSR State Prize laureate A. Mingazov, who have undertaken to reduce losses due to defective products by 23 percent and to operate without a single recall.

But no matter how much they prepared, nevertheless many of those November slips of the conveyor were noticeably lost. People hinted to the director of the state inspection, O. Kurshev, isn't it possible to ease up a little, Oleg Vasilyevich? People will be without wages. . .

"Let's experience it one time," Kurshev adheres strictly to the idea.

He does not cut himself and his 200 colleagues off from the difficulties of qualitative transition. Those same forging plant directors who achieved a relaxation of production control are convinced: the state inspection workers are not impassive examiners in the lesson of quality, rather they themselves have an interest in a good evaluation. They are not limited to pointing a finger and saying, here is waste--eliminate it. Together with the plant's control and technical services they have begun searching for the reasons for departures from the standard. For example, why does the forge work not meet GOST [All-Union State Standard] requirements for metal hardness? They went along the chain and it became clear--they had mixed up the grades of steel. This happened because of scandalous storage of rolled stock. It was all dumped in one pile and pooled, just the way it came into the purchasing agent's hands. They spent all day putting the purchasing shop in order, and the problem was solved.

In the forging plant there were deviations in the thermal treatment of half-axles. This time it took 48 hours to eliminate the flaw. The forging workers had to work longer shifts and on their days off, but they had to pay for their sins, as they say. It was established that 12 percent of all the violations at the association's plants are the fault of the workers themselves.

"We are encouraging the state inspection workers to look for the weak spots in the vehicles as they are assembled, rather than at the end," says O. Kurshev. "We are also working in this direction with the plant quality services."

About 5000 controllers are standing guard on quality. Right now this service is directly under the assistant general director of KamAZ. The pay for quality control foremen has been brought up to equal that of producers and it has been decided to award them a classification. The bonus system has been changed at the association; incentives for the controllers--up to 60 percent of the addition to the salary--will be given primarily for reductions in the number of recalls and expenditures during the guarantee period of vehicle operation. There is now a direct interest in the fight for reliability. Passive registration of instances of waste, especially attempts to hide them, has been eliminated--one way or another this will show up in the final result.

Once a week representatives of the two control services meet together and determine where and at what positions they need to increase their influence. Contacts are becoming closer and closer. The task has been set--there should be no anonymous bad workmen at KamAZ. A brigade form of grading parts, assemblies and units is being instituted. The demands on shop foremen have increased--if you cannot find those guilty of the waste, you will pay for the loss out of your own pocket. It is a strict measure, but it cannot be avoided. It can be reconciled with the fact that from January through November less than one percent of total losses was deducted from bad workmen. State inspection is changing its position fundamentally. At the engine plant, which is the leader in terms of recalls, the number of deductions from bad workmen increased three-fold in one month.

Nevertheless, the sanctions system has not been properly worked out yet and many directors are not even acquainted with the legal standards. As usual, losses due to waste are covered up at the government's expense, for example, at the

casting plant, the Zainsk vehicle plant and other KamAZ enterprises. It is clear that this kind of approach to business must come to an end.

For the vehicle workers, November became a month of noticeable change in quality. It also showed that special sectors of experienced workers and specialists are being set up at enterprises in order to catch and eliminate known causes of waste. The demands on suppliers within the association have become stricter. Before, technical control departments, having received unfit parts and units from suppliers, could not even reject them without the consent of the perpetrator. Now the OTK [technical control department] has that right.

It is more complicated with external suppliers, and there are many of them. More than 450 of the country's enterprises send components to KamAZ. About 40 of them supply products that deviate from the specifications. KamAZ workers have many complaints about goods from the Motordetal plant in Kostroma (intake control rejects approximately 20 percent of the deliveries from this enterprise) and the Avtonormal plant in Belebey (Bashkiriya).

What is to be done? Sit idle? No, specialists from the association and from state inspection went out from Brezhnev to the unfavorable supplier plants in order to define more precisely the production forms and records and to develop together measures to improve the quality of component goods. This is the more necessary, since the state inspection is not established at all at the allied suppliers. Not long ago at KamAZ there was a conference on quality and the participation of suppliers. It is too bad that the recall recordholders, representatives of the industrial rubber plant in Balakovo and Motordetal in Kostroma, did not consider it necessary to participate.

KamAZ is bringing mature, experienced specialists into the service of the state inspection and plant OTKs. Unfortunately, their potential is not being fully taken advantage of because at times the necessary measuring apparatus and active control are lacking. The plant workers are putting together some systems with their own efforts, but life shows that this is not a solution. The volume of automatic control should be several times higher. So far, crucial indicators of the reliability of products are falling from the field of vision of quality service, through no fault of its own. For example, the crankshaft of an engine must pass inspection on 42 parameters. But the control apparatus of the Kalibr plant in Moscow turned out to be inadequate for this, and half of the data on production is taken by hand, while other parameters are not checked at all. They determine the quality of many component parts by eye.

KamAZ is improving from year to year, and its design data are valued on the external market. The engines are becoming more powerful and more economical. Preparation is underway for the lot production of a low-revolution diesel that will allow total kilometers logged to be increased to 100,000 and fuel consumption reduced at the same time. A lot of gas-diesel engines has been produced. In a word, we are on the right track. Nevertheless, many of the lines KamAZ must cross in order to come up to the level of the world's best truck models have been put off to the end of the five-year plan or beyond. The state inspection workers do not agree with this. Such sluggishness will be costly for our economy to avoid.

But the Kama vehicle workers have an opportunity to hasten the achievement of the world standard. They will have a modern engineering center at their disposal. The design specializations have already been laid out; part of their efforts will be occupied with serial models, and the other part with experimental potential models. A strong, creative engineering corps has been assembled at the association and thousands of workers are distinguished by innovative achievements. There is good potential for acceleration!

The vehicle builders' watch this month, when the state inspection has begun to operate at the end of the conveyor, is also evidence of plentiful resources. Thirty percent of total production has been seized by the state control. It was difficult, very difficult to renounce the habitual emphasis on quantity, on volume, and to work with persistent care to quality. But the collective withstood the test and showed its readiness to labor in a regime of strict demand for the integrity of the brand. The November plan has nevertheless been fulfilled by the association, and dozens of additional vehicles have been assembled. True, the excess turned out to be somewhat less than usual, but will be memorable for that. As a matter of fact, in November KamAZ began the steep ascent to its future glory.

"We, the workers, have already felt it in the time we were preparing for the state inspection; you cannot joke with Gosstandart. And we have also understood that the bad workmen's time is over," said the distinguished concrete workers' brigade leader Shaukat Khusnutdinov. "We should have turned our eye toward quality long ago!"

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## MOTOR VEHICLES, HIGHWAYS

### MORE CRITICISM OF SOVIET BUS PRODUCTION

Moscow PRAVDA in Russian 16 Dec 86 p 2

[Article by engineer-designers V. Belik and B. Kurach: "What Should Buses Be Like?: Machinebuilding Is the Catalyst of Progress"]

[Text] Lvov--Recently in the pages of PRAVDA there have been heated discussions of the merits and shortcomings of the buses that are being readied for production. In particular, the LAZ 42-02, born within the walls of the All-Union Design-Experimental Institute of Bus Building (VKEIavtobusprom) and removed from production because of operational-technical flaws, and the similarly designed LiAZ 52-56.

It is difficult to overestimate the significance of bus technology--in the majority of cities it is the leading means of public transportation. But Soyuzavtobusprom, producing thousands of intracity LiAZs each year, is not meeting the demand for them and one "bus" city gets three or four vehicles. There are not even enough to replace the vehicles being culled from the fleet. Bus building has turned out to be the most backward link in USSR Minavtoprom, a peculiar remnant of extensive production.

The roots of this technical archaism go back to those far away years when every model of bus was designed as a unique piece of equipment, requiring its own technology and production organization. The famous PAZ [Pavlovo Bus Works], LiAZ [Likino Bus Works] and LAZ [Lvov Bus Works] models and the ZiU [M.S. Uritskiy Works] trolleybuses were only 10 percent unified among themselves. Thus took shape the extreme specialization of plants in the production of only one standard size of buses. As a result, the economy gets four different types of vehicle, and each one requires its own stock of spare parts, repair equipment and fixtures. All this excessively complicates the work of vehicle transport enterprises and orients their development also along an extensive line. As a result, bus maintenance and repair costs exceed manufacturing costs dozens of times. If the production of such vehicles were increased two or three-fold, the country's motor vehicle transport system simply would not be able to cope.

Soyuzavtobusprom does not have a scientifically developed and officially accepted forecast of demands or projected standardizations of buses. Its orientation toward the individuality and uniqueness of product design, the universality and

technological autonomy of production are elements of the hopelessly outdated conception of development engineers, industrial workers and the management of Minavtoprom.

However, from the same positions, they are designing and readying for production the so-called family of LAZs 42-04 and 42-05, which are modifications of the LAZ 42-02, PAZ 32-05 and the ZiU 62-02 trolleybus, removed from production and unified only to the extent of six or seven percent. In that way the economy again will receive a unique item, the capacity of which will be significantly reduced in comparison with those in serial production; the specific consumption of materials will also grow.

Today there is an urgent need to undertake a fundamental reorganization of the branch, basing it on the new generation of technology.

The first generation of buses, characteristic of the world's machine building from the 1930's to the '50's, had a minimum of unification in the body and the chassis. The modern level of vehicles defines the second generation, which developed in the 1960's and '70's. Its distinguishing characteristic is a maximum of unification in a series of bus bodies and a minimum in their chassis; this ensures 30-40 percent unification on the whole. We are using buses of the first generation that fall far short of the world standard. It is not clear why USSR Minavtoprom is laying out for the future production of vehicles that are, in terms of basic characteristics, typical representatives of the first generation.

Ten years ago the design for a third generation of buses was developed by our initiative. It is characterized by maximal unification of the series of bus bodies and chassis, and vehicles of module-block design in small, medium, large and extra-large capacities. At this level the unification for mechanical drive has reached 85 percent and for the electrical drive it is 95 percent. Taking this series as a reference point, the authors of the project developed a system of series of module-unified (intracity, suburban, intercity and tourist-type) full-drive buses as well as a series of self-propelled bus chassis. The efficiency and novelty of the project is protected by a patent on the invention in the USSR, and has been recognized abroad.

The vehicle of unification is the integral module, which comprises elements of the body and chassis. Adoption of this principle of design will allow four types of buses to be replaced by one. Based on it, it is possible to produce a system of 20 vehicles, i.e., practically all the transport equipment necessary to satisfy the country's needs.

What else is important? The capacity of the third-generation buses relative to those now in serial production and those proposed for the future is increased two-fold and the specific consumption of materials is reduced by 40 percent on the average. Vehicles of the third generation afford a two-fold reduction of the load on the road and an identical load distribution on each axle, and sharply increase active safety and stability.

Adoption of integral modules is capable of guaranteeing their specialized production and assembly at enterprises that can produce not one standard item,

but the buses and trolleybuses needed by the national economy. With a view to this it makes sense to convert two of five plants to body assembly and the remaining ones to narrowly specialized unit plants. This kind of readjustment will free up GAZ [Gorky Motor Vehicle Works], ZIL [Moscow Motor Vehicle Works imeni Likhachev] and Ikarus from supplying the branch with self-propelled chassis, axles and guided shafts. Then motor vehicle transport enterprises could get on an intensive development track.

The high degree of unification in buses of the third generation creates conditions for control of all levels of production, as well as for automation of their development. The average annual economic effect of the implementation of these vehicles will comprise more than 640 million rubles per year according to the preliminary calculations of the Lvov division of the UkSSR AN [Academy of Sciences] Institute of Economics.

The proposed development significantly exceeds the current world standard set by the leading foreign motor vehicle firms.

In spite of the clear advantages of the project, VKEIavtobusprom greeted it strangely at best. At first the development received the status of a distant prospect that was readily demonstrated to important guests of the institute. Over the years, the project unfortunately turned into a "permanent prospect". But as, in the development process (actually in that same initiative), the advantages of the modular buses out of the whole system of module-unified equipment became more and more clear, after domestic and foreign patents were received, and after the determination of such an unexpected economic effect, they began to speak more and more rarely about the project and, with the authors, more angrily.

We are not talking about the insulted pride of the authors here. The problem is technical politics at USSR Minavtoprom. They have heard about the development there. But the years are going by and for some reason the branch is not inclined to adopt the vehicles of the third generation.

For some time there has been a "zone of silence" around the project. It is no longer demonstrated and nowhere talked about. Not a word was said about it at conferences on the future of bus building in GKNT [State Committee on Science and Technology] and Minavtoprom.

The natural question is, why?

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